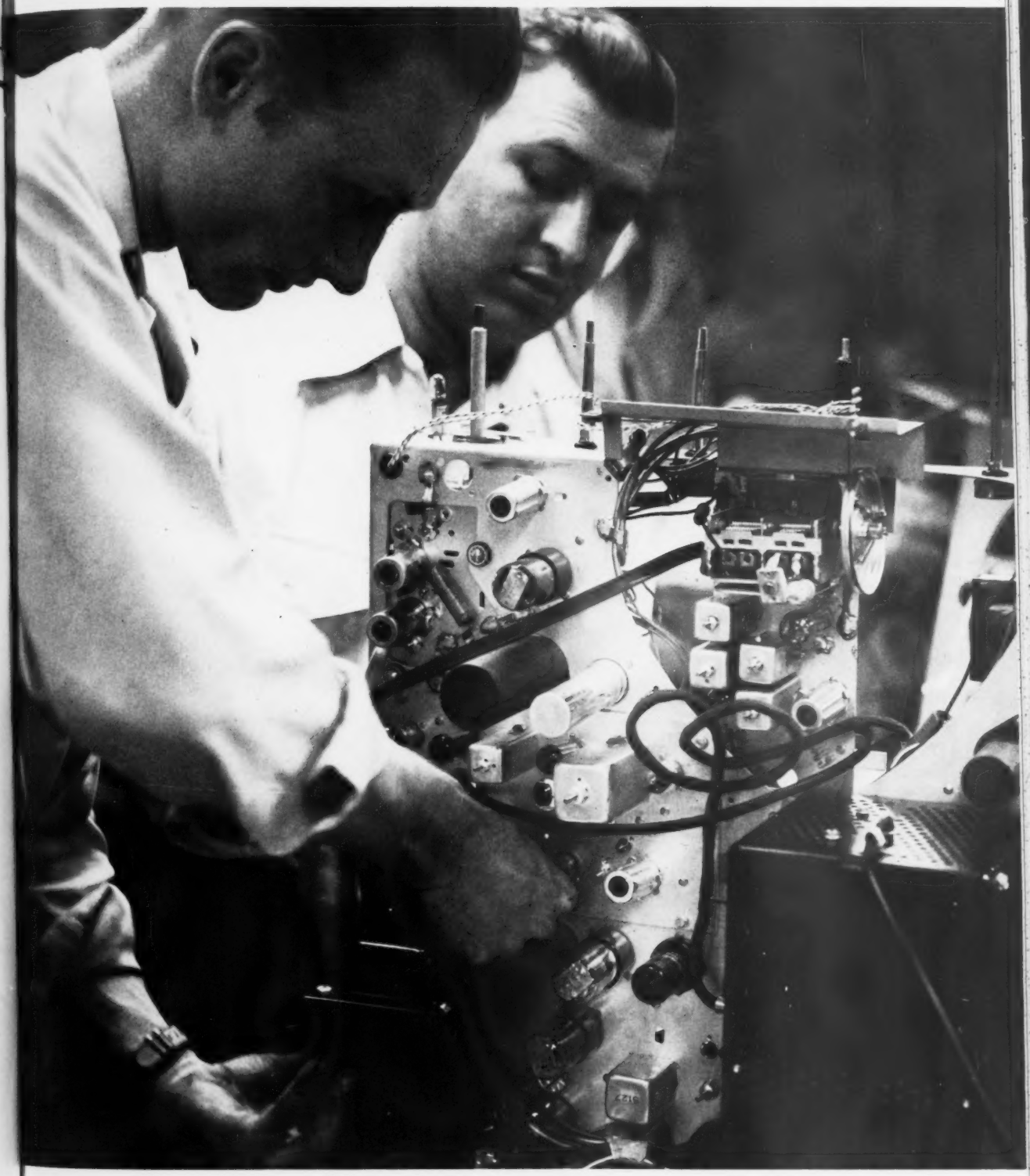
WESTERN INDUSTRY



• *In electronics developments, the West sparkles. Final test bench in television set factory. For details see page 5.*

JUNE 1950 VOLUME XV NUMBER 6

- ***Kirksite dies open new industrial fields, may end short-run production costs. p. 33***
- ***Only four people handle accounting and detail on $10,000,000 annual sales. p. 37***
- ***Product buyers consider only 2.7 makes. See how to put yours in that group. p. 40***
- ***Hard water can foul up your equipment and costs. Make it soft for yourself. p. 48***

There's more to a Wirebound box than wood, wire and price!

Experience, manufacturing facilities and container know-how result in sound engineering, prompt service, dependability. Cabco has been manufacturing wooden containers since 1883. Facilities embrace every operation from logging to the finished wirebound. Cabco is the West's recognized leader in designing, developing and supplying wooden shipping containers.

NEW CABCO WIREBOUND SOLVES FIREBRICK EXPORT PROBLEM

The export shipment of large quantities of firebrick posed a tough container problem to Kaiser Aluminum & Chemical Company. A nailed crate first used was slow and difficult to pack, and had a net weight of over 30 pounds.

Cabco engineers designed a sturdy wirebound that reduced container weight to under 20 pounds, yet snugly, securely contained over 400 pounds of firebrick. The new wirebound also saved on labor costs, since it proved much easier and faster to load, handle and palletize. In addition, there was a saving in storage space.

Perhaps there is a new use for light, strong Cabco wirebounds in your business.

Cabco wirebounds fold up quickly, easily, ready for immediate use on the packing line.

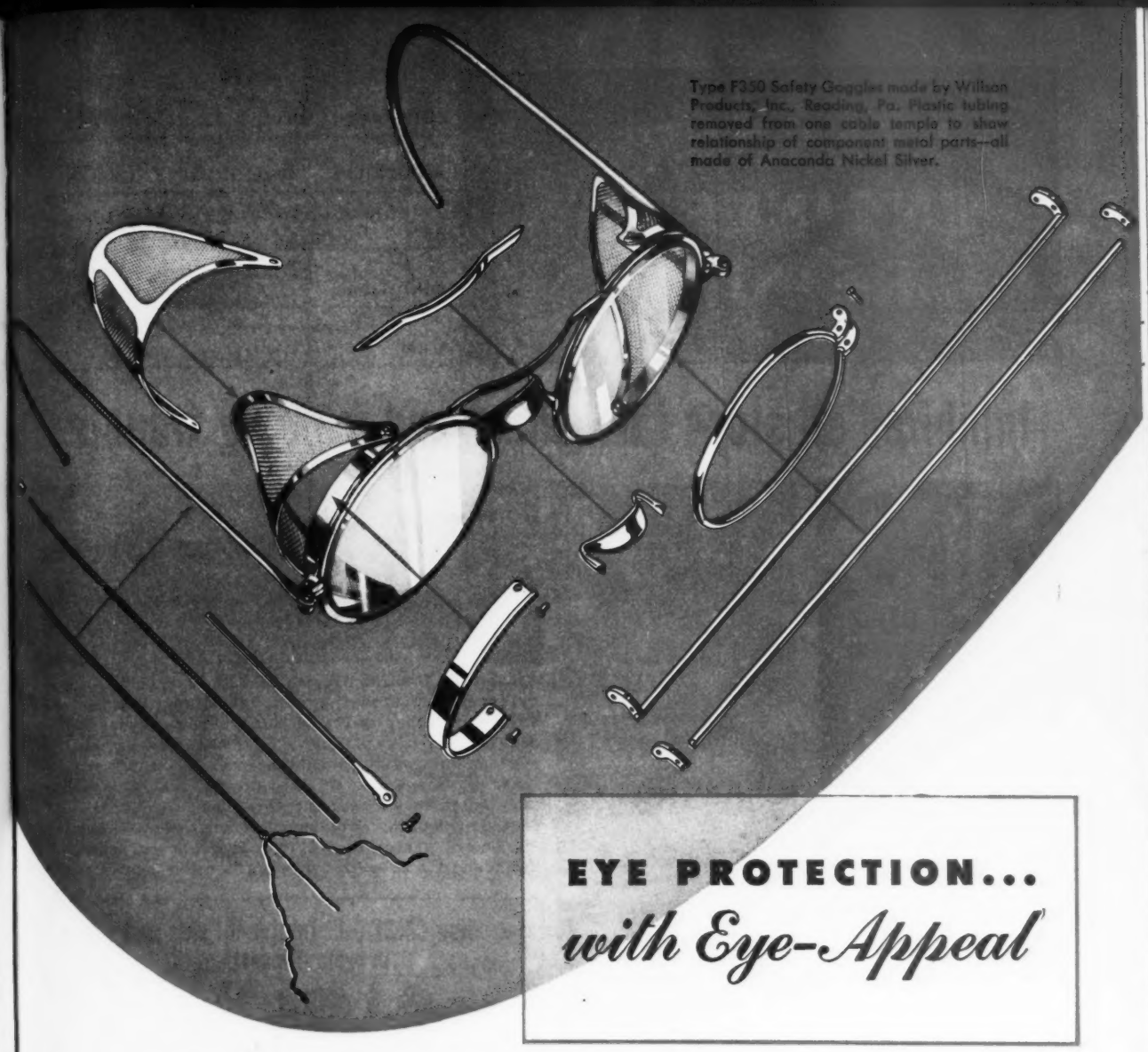
CABCO
CONTAINERS

A product of the California Barrel Company, Ltd.

Sold only through

DUFF CALIFORNIA CO.

100 Bush Street, San Francisco 4, California
2581 E. Eighth Street, Los Angeles 23, California
501 Dooley Building, Salt Lake City 1, Utah



Type F350 Safety Goggles made by Willson Products, Inc., Reading, Pa. Plastic tubing removed from one cable temple to show relationship of component metal parts—all made of Anaconda Nickel Silver.

EYE PROTECTION... *with Eye-Appeal*

When a functionally efficient product possesses beauty—plus day in and day out serviceability—many of its merchandising problems are overcome.

The manufacturers of Willson Safety Goggles have found that Nickel Silver supplies this attractiveness and sturdiness in abundance. What's more, it provides an equally important third requirement—economy of fabrication . . . for Nickel Silver is one of the most workable metals available.

If the manufacture and sale of your product could be enhanced through this combination of clear-through beauty, ready workability and a longer service life—think in terms of Anaconda Nickel Silver. The American Brass Company can supply both the metal and the know-how, for each year it produces millions of pounds in all commercial forms, in all standard compositions, finishes and tempers. The address is Waterbury 20, Connecticut; in Canada, New Toronto, Ontario. 5098

ANACONDA *the name to remember*
in **NICKEL SILVER**

SHEETS • STRIPS • PLATES • WIRE • RODS • BARS • TUBES

STANDARD ENGINEER'S REPORT

DATA

LUBRICANT Calol O.C. Turbine Oil

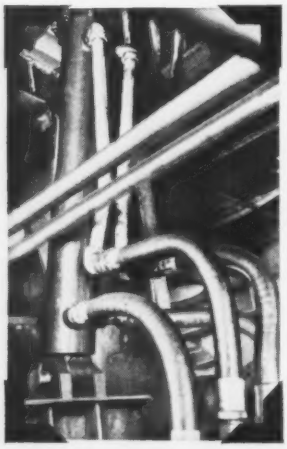
APPLICATION Hydraulic Medium

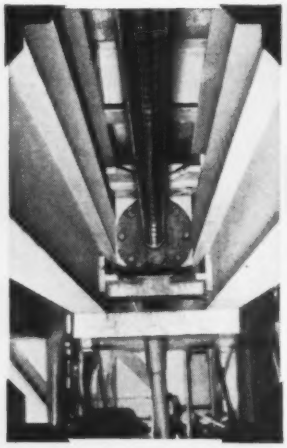
UNIT Hydraulically-operated sawmill 10,000 bd. ft. per day capacity

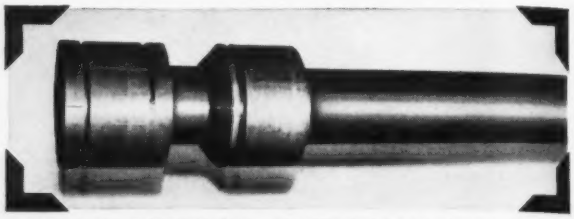
CONDITIONS Extreme temp. and pressures—cyl. + rods exposed to moisture

FIRM Ivory Pine Co. of Calif., Dinuba, Calif.

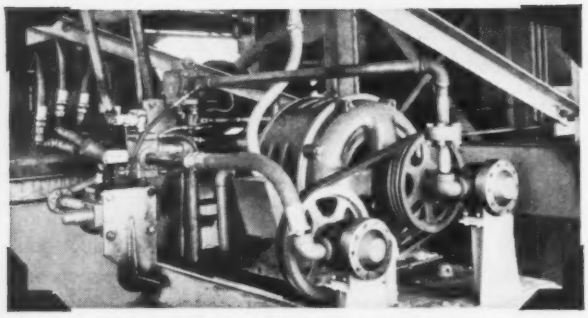
Inhibited oil stops thickening and foaming trouble







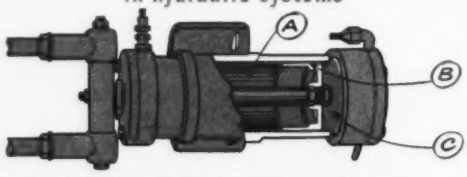
CALOL O.C. TURBINE OIL, AS HYDRAULIC MEDIUM in these cylinders, pistons, pumps, etc., operating feed works and other units of Ivory Pine Company's hydraulically-powered sawmill, has prevented any rusting, deposit formation, and leaks caused by foaming, since the mill started. Ordinary oil in similar units knocked out three pumps, lost 175,000 feet production. Note shiny, unrusted surface, and oil on 16' piston rod (left). When photographed, it had been idle in damp, foggy weather for three months!



"IN ALL SIX OF OUR HYDRAULIC SYSTEMS, CALOL O.C. Turbine Oil has eliminated oil foaming and 'jelling' trouble," says Mr. E. P. Ivory, president of the company. "And we've found no rust, even on our lift cylinder at the surface of the log pond."

REMARKS: Developed and built by The Peters Co., Portland, Ore., this new type sawmill is the most complete of its kind. Its logs, cut from a U. S. Forest Service Sustained Yield Unit, are hauled 50 miles to the mill during the summer so it can operate the year around.

How CALOL O.C. Turbine Oil cuts costs in hydraulic systems



Used as the hydraulic medium in feeds and lifts of any kind, CALOL O.C. Turbine Oil will not form carbon or foam excessively.

A. Contains very effective oxidation inhibitor—will not deteriorate and plug lines and retard action of cylinders.

B. Corrosion inhibitor prevents rusting and pitting—has high metal-wetting ability.

C. Separates readily from water or other contaminants—dirty oil may be reclaimed easily...charge lasts indefinitely, leakage only cause for replacement.

STANDARD TECHNICAL SERVICE checked this product performance. If you have a lubrication or fuel problem your Standard Fuel and Lubricant Engineer or Representative will give you expert help; or write Standard of California, 225 Bush St., San Francisco.

CALOL

TRADEMARK "CALOL" REG. U.S. PAT. OFF.

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This Month in WESTERN INDUSTRY

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It's a Puzzle After All

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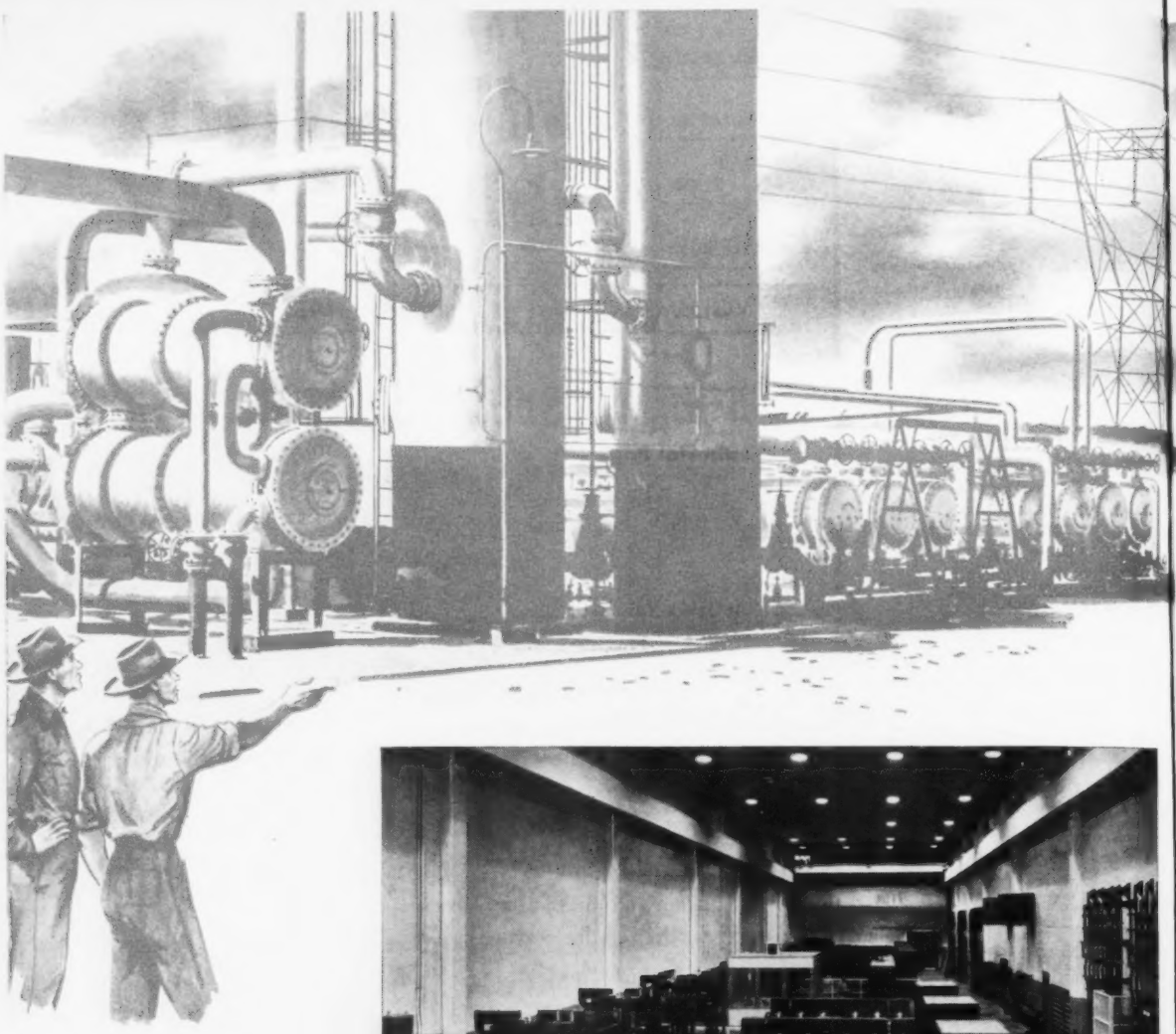
Front Cover

Electronics in the West has various angles of development, from tubes to television set manufacturing and program producing, with the government's miniaturization program helping keep television engineers on their toes. Cover scene is from one of Hoffman Radio Corp.' six Los Angeles factories.



Westinghouse Ignitrons—low-cost d-c power for Western Electrochemical Company's plant at Henderson, Nevada.

CHEMICALS IN THE WEST...MORE PLANTS, WORKERS, OUTPUT

Fast grower and big power user is the Western chemical industry. Since 1939 its productive value has zoomed 274%. The labor force has doubled. More than 300 new plants have been built.

Topnotch electrical equipment helps the industry get the most out of power, helps it grow. Take a prime Westinghouse development like Ignitron rectifiers shown above. Those big cylinders take in a-c power, shoot d-c to electrolytic cells producing sodium chlorate. Power is a big cost item—and Ignitrons deliver d-c more efficiently than *any* other large-scale means. Long range result: lower costs, more sales, *more growth.*

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

Why Has Western Power Consumption Jumped 2½ Times in Ten Years?

Ten short years ago the wattmeters in the West registered 17 billion kilowatthours. In 1948 they chalked up a record-breaking 43-billion kilowatthours—*2½ times over the '39 figure* (and on a per capita basis, 40% more than the U. S. average).

Why the big jump? One reason: the growth of Western industry. Since 1939 the West's industrial output has *more than doubled.* That's where most of the extra kilowatts are going!

Westinghouse fits into this Western power and industry picture in two big ways. First, much of the apparatus that generates the power industry needs, was engineered by Westinghouse. Secondly, Westinghouse equipment, like the Ignitron rectifiers at left, helps industry *use* this power more efficiently.

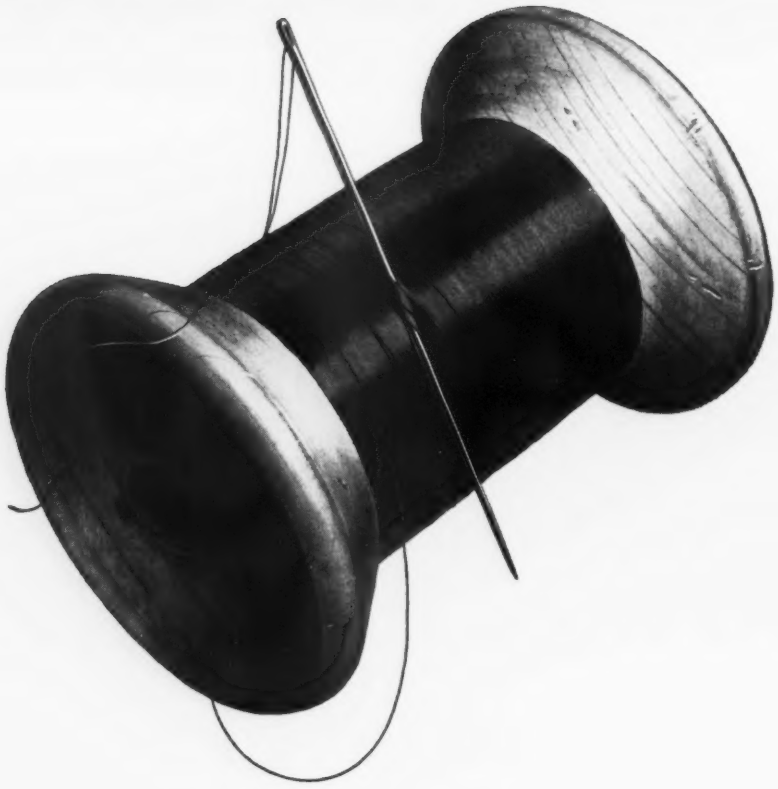
A good deal of the Westinghouse apparatus made for the West is produced at our eight electrical plants IN the West (including Sunnyvale, the West's largest). So Westinghouse itself is part of the growing industry that uses the new Western power.

We have a basic stake, a deep-rooted interest, in the growth of Western industry and power. When you have a problem in electricity—making it, using it, your nearest Westinghouse office is a good place to go. J-94831

Westinghouse

A MAJOR FORCE IN WESTERN GROWTH

PLANTS AT BERKELEY, DENVER, EMERYVILLE, LOS ANGELES, PORTLAND, SALT LAKE CITY, SEATTLE, SUNNYVALE



Tailored to suit the growing West

Mill by mill, Kaiser Steel's Fontana plant has been expanded to meet the growing needs of the West.

In line with this policy, Kaiser Steel has just installed a modern, new hot strip mill, providing hot rolled sheets and coiled strip—important to manufacturers of such diverse products as stoves, water heaters, food machinery, irrigation pipe, oil and domestic water tanks, truck bodies, auto frames.

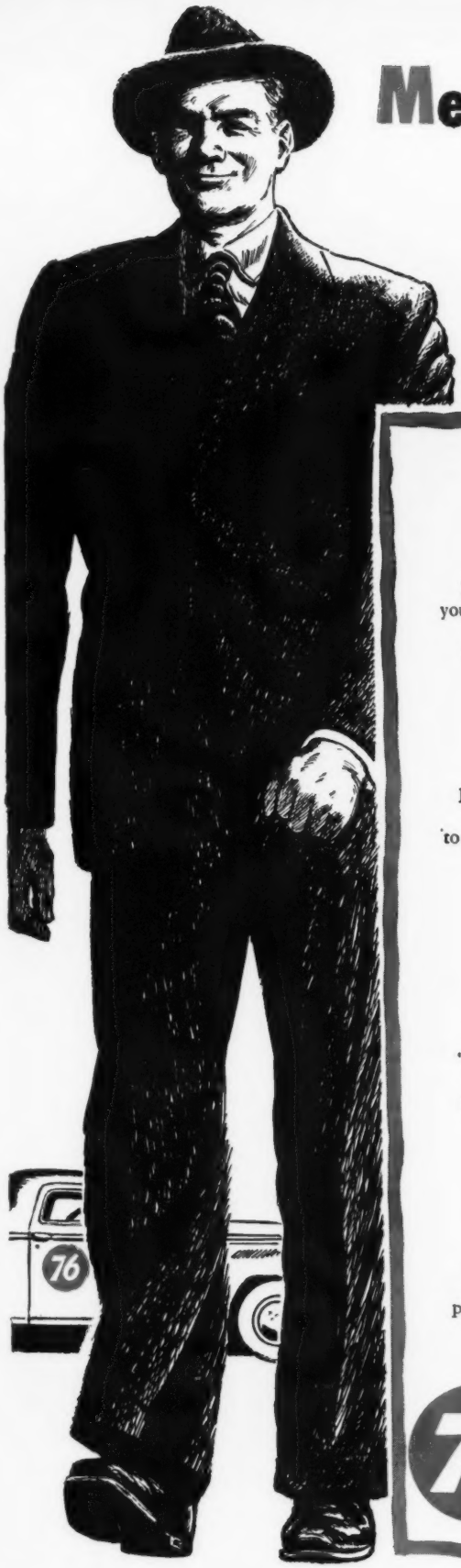
By thus tailoring its growth to the needs of its customers, the West's only integrated *independent* steel plant is bringing more industry, more jobs, more wealth to the West!

It's good business to do business with

Kaiser Steel

built to serve the West

PROMPT, DEPENDABLE DELIVERY AT COMPETITIVE PRICES • plates • continuous weld pipe • electric weld pipe • hot rolled strip • hot rolled sheet • alloy bars carbon bars • structural shapes • cold rolled strip • cold rolled sheet • special bar sections • semi-finished steels • pig iron • coke oven by-products
For details and specifications, write: **KAISER STEEL CORPORATION, LOS ANGELES, OAKLAND, SEATTLE, PORTLAND, HOUSTON, TULSA, NEW YORK**



Meet the man who can help you save on lubrication and maintenance costs

It takes *more* than a line of outstanding oils and greases to save you money on lubrication and maintenance costs. What's essential is the *proper application* of those products to *your own specific problems.* And that's where our service representatives come in.

For you'll find that Union Oil's lubrication representatives are men with wide experience in the application of the proper lubricants to all types of West Coast plant operations. These men know *exactly* what can be done to insure greater production and lower your over-all maintenance costs.

And, what's mighty important, these Union Oil men with the "know-how" *want to help you* in every way they can. You'll find they enjoy digging into a tough problem and coming up with the specific answer that may improve your present lubrication practices and help you effect definite savings.

So don't hesitate to call on your Union Oil service representative for help. Let him make a complete lubrication survey of your plant operations, at no cost or obligation to you. With the *proper utilization* of such outstanding Union Oil products as UNOBA and T5X, you can gear *your* plant for greater efficiency.

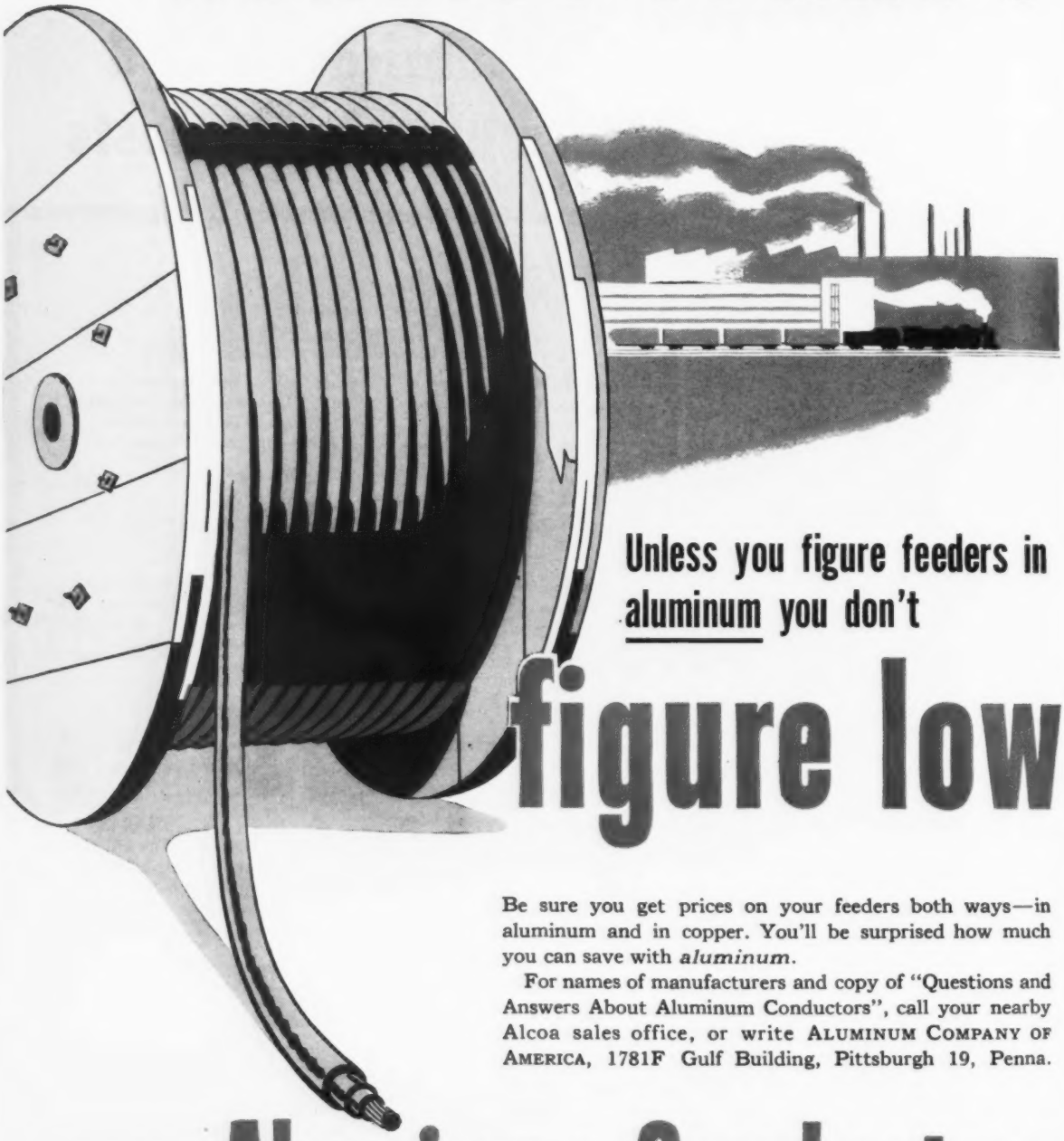
76

UNION OIL COMPANY
OF CALIFORNIA

"The Toughest Lubricants in the Field"

Wiring for

heavier loads?



Unless you figure feeders in aluminum you don't

figure low

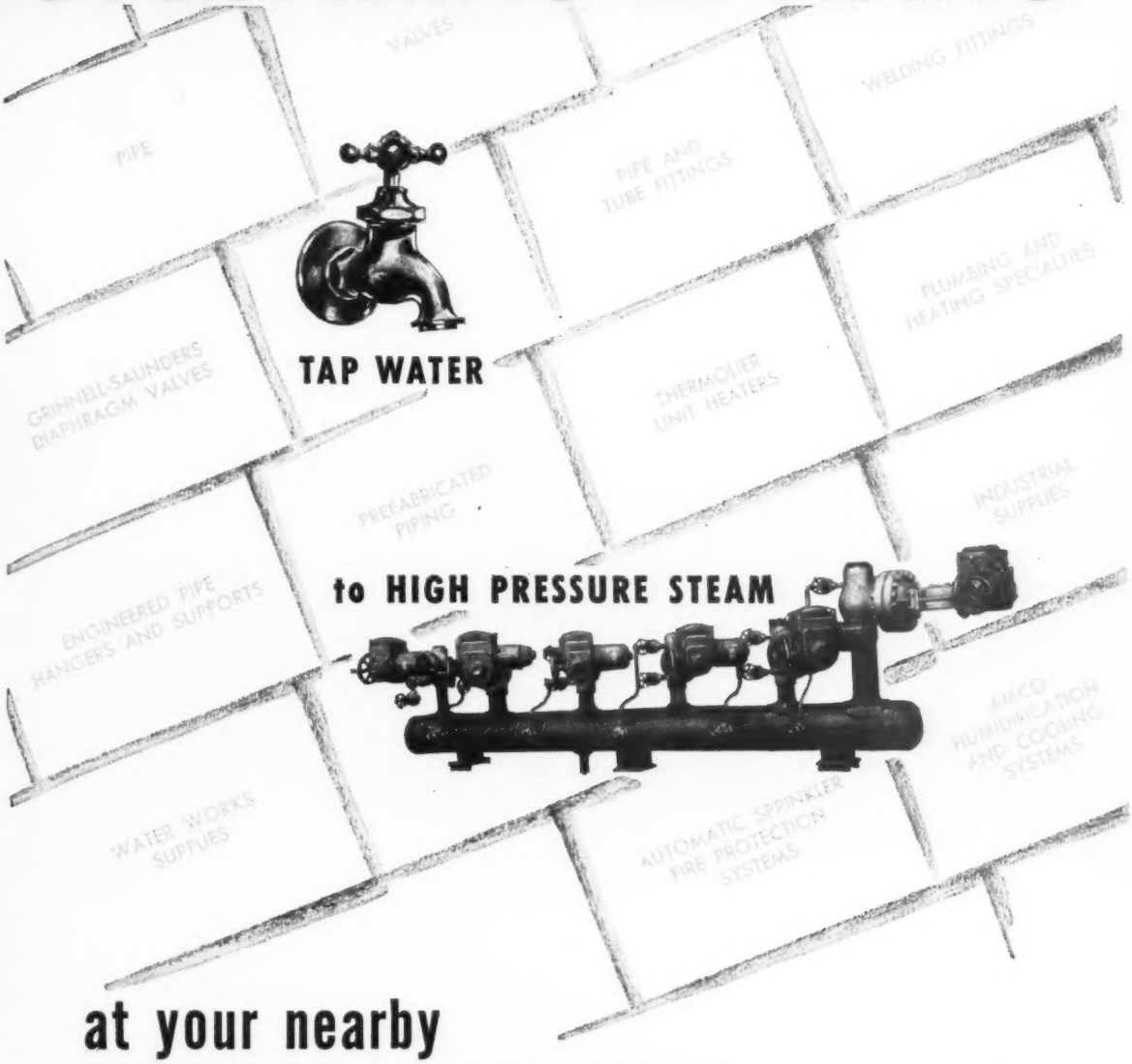
Be sure you get prices on your feeders both ways—in aluminum and in copper. You'll be surprised how much you can save with *aluminum*.

For names of manufacturers and copy of "Questions and Answers About Aluminum Conductors", call your nearby Alcoa sales office, or write ALUMINUM COMPANY OF AMERICA, 1781F Gulf Building, Pittsburgh 19, Penna.

Insulated **Aluminum Conductors**

of ALCOA EC ALUMINUM are made by leading manufacturers

EVERYTHING for PIPING



at your nearby GRINNELL WAREHOUSE or JOBBER

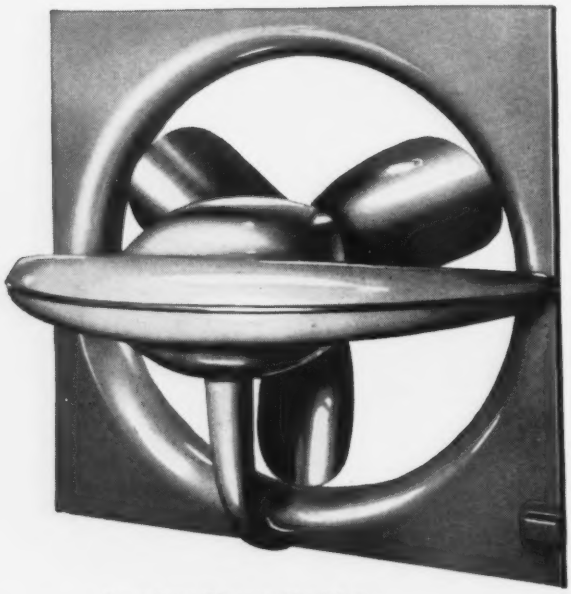
More than 1000 Grinnell warehouses and jobbers . . . one within easy reach of your phone . . . are ready to give you prompt delivery on any standard piping product. When the job calls for specialized piping products or installations, Grinnell has the manufacturing facilities, products, experience and engineering knowledge to "deliver the goods."

100th ANNIVERSARY — PIPING

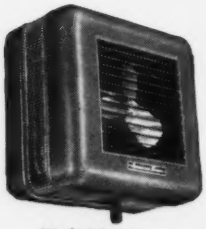
GRINNELL

Grinnell Company of the Pacific. Branch warehouses: Fresno • Long Beach • Los Angeles • Oakland • Pocatello • Sacramento • San Francisco • Seattle • Spokane

GOOD VENTILATION IS GOOD BUSINESS

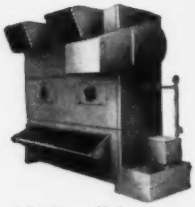


American Blower Model A
Ventura Fan

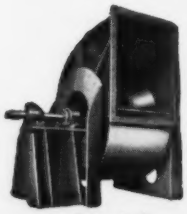


Unit Heaters

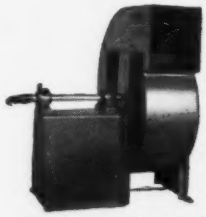
Utility Sets



Air Conditioning Equipment



Industrial Fans



Type E Industrial Fans

You'll be amazed and delighted when you see how effectively good ventilation boosts employee morale, curbs illness and encourages better working conditions in *your* business.

The smartly designed, easy-to-clean American Blower Ventura Fan (shown above), for example, readily exhausts bad air, disagreeable odors, smoke and fumes, and does it at costs consistent with good business judgment.

The Ventura Fan is ideal for offices, restaurants, reception, display and rest rooms. There's no exposed wiring—operating costs are low. You can buy Ventura Fans with Certified capacity ratings from 1000 cfm to 79,000 cfm, free delivery.

No matter what your needs, you'll be money ahead to buy quality-built, time-proved American Blower heating, cooling, drying, ventilating, air conditioning and power transmission equipment. And remember, you can get prompt deliveries from our new West Coast plant, located in San Leandro, California.

Ask our nearest Branch Office for data.

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO
Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

YOUR BEST BUY AMERICAN BLOWER AIR HANDLING EQUIPMENT

Serving home and industry

AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

Where does Felt serve in your Factory?

There isn't a plant in this country that does not make use of felt in some way. It is one of the hidden but important engineering materials that help industry make better products and improve plant operations. In an automobile, for example, there are some 90 different applications of felt, and in an automobile plant at least another 90. Many of these are not apparent by casual inspection but long life, smooth performance, freedom from vibration and positive lubrication are frequently the result of well engineered, reliable felt parts. Check your plant and your products — are you making full use of the many advantages offered by felt?

1 MOTORS 2 VIBRATION MOUNTINGS 3 SHOCK DAMPENERS 4 GENERATORS 5 OIL BURNERS 6 HANGER OILERS 7 BALL BEARINGS 8 ROLLER BEARINGS 9 WORKERS FLOOR PADS 10 BUFFING WHEELS 11 CASTERS 12 TRUCKS 13 PASSENGER CARS 14 TRACTORS 15 FAUCETS 16 OIL RETAINERS 17 DUST SHIELDS 18 WORK SHOES 19 OIL WIPERS 20 FILTERS 21 VENTILATORS 22 WICKS 23 THERMAL INSULATION 24 GRINDING 25 GOGGLE SHIELDS 26 FOUNDRY GLOVES 27 RESPIRATORS 28 SANDER BELTS 29 HOSPITAL SUPPLIES 30 COMMISSARY EQUIPMENT 31 WEATHERSTRIP 32 BULLETIN BOARDS 33 SWITCH BOARDS 34 RELAY BOARDS 35 TELEPHONES 36 TELETYPE 37 TELEGRAPH 38 P. A. SYSTEM 39 RADIOS 40 BUSINESS MACHINES 41 TYPEWRITERS 42 DUPLICATING MACHINES 43 POLISHING 44 CHAIR PADS 45 LEDGER CORNERS 46 DOOR BUMPERS 47 GLASS DESK TOP STRIPS 48 BLOTTER PADS 49 TABLE TOPS 50 AIR CONDITIONING 51 COLD LINE INSULATION 52 SOUND ABSORPTION 53 ASH TRAY BASES 54 CIGAR LIGHTERS 55 LAUNDRY EQUIPMENT 56 INSULATION 57 SEWING MACHINES

The uses shown here are mainly generic, because there are hundreds of places in the modern factory where felt is used. American Felt is made in many standardized types, and is an engineered fabric that can be specified as accurately as any other material.

American Felt Company

TRADE MARK

QUICK DELIVERY—Stocks of American Felt are maintained in San Francisco, Los Angeles, Portland an Seattle, for the convenience of Pacific Coast customers. For quotations, samples and Data Sheets write to:

A. B. BOYD CO......1235 Howard Street
San Francisco 3, California

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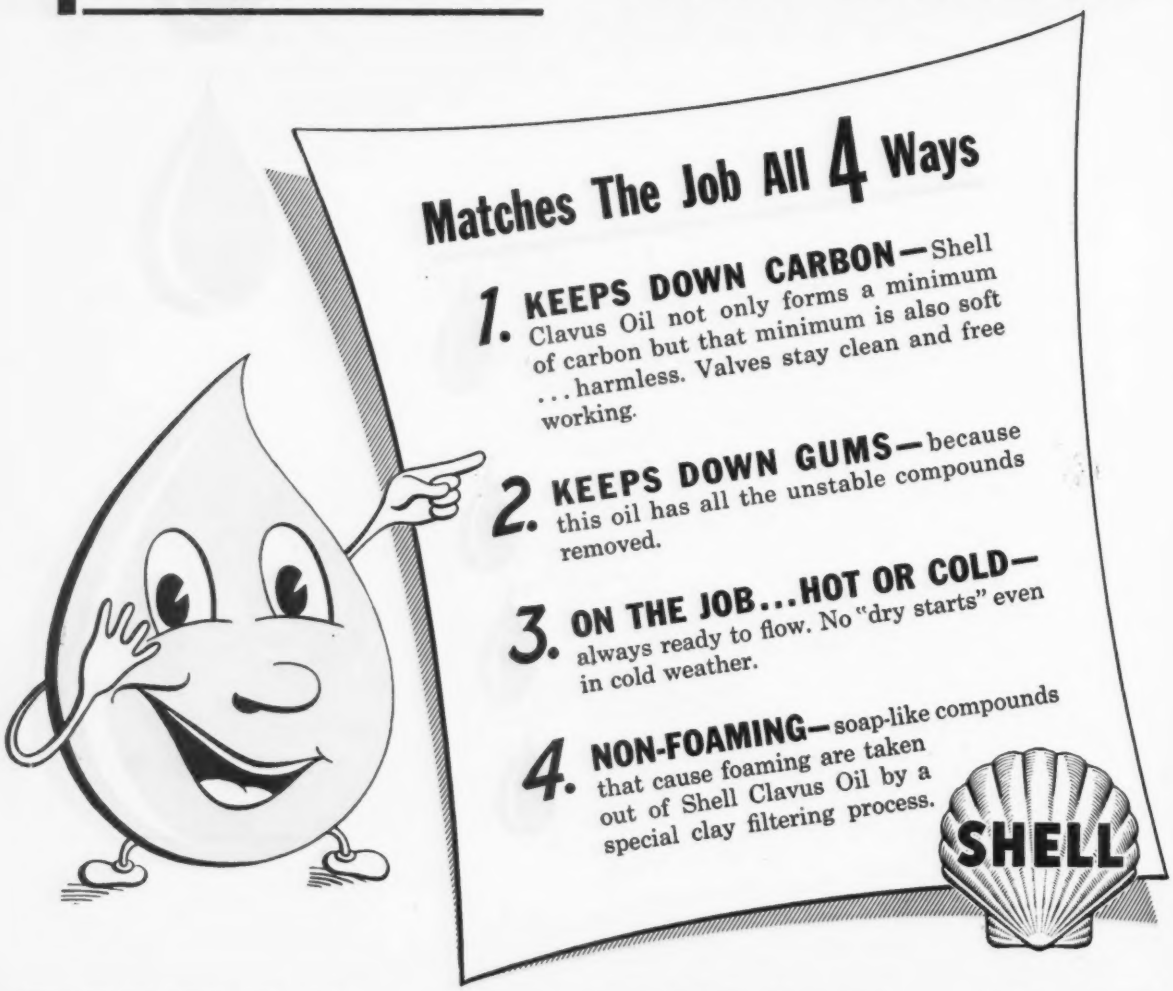
Get Shell Clavus Oil to...

give your compressors protective lubrication


Matches The Job All 4 Ways
1. KEEPS DOWN CARBON—Shell Clavus Oil not only forms a minimum of carbon but that minimum is also soft . . . harmless. Valves stay clean and free working.
2. KEEPS DOWN GUMS—because this oil has all the unstable compounds removed.
3. ON THE JOB . . . HOT OR COLD—always ready to flow. No "dry starts" even in cold weather.
4. NON-FOAMING—soap-like compounds that cause foaming are taken out of Shell Clavus Oil by a special clay filtering process.
SHELL

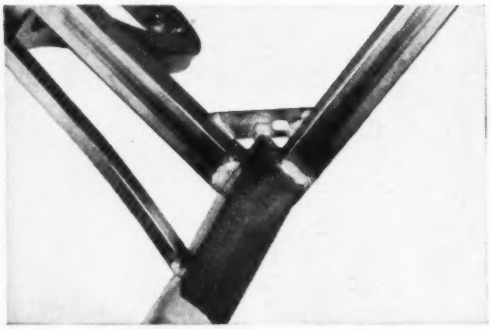
SHELL CLAVUS OIL

made especially for compressors

56 welds in 25 minutes!

Note smooth weld surfaces. Practically no finishing needed before painting.

No wonder they use ANACONDA 997 Low Fuming Bronze Welding Rod!



Steel chair oxyacetylene braze-welded by vapor flux method with ANACONDA *997 Low Fuming Bronze Welding Rod. Total welding time, per chair, 25 minutes. Total welds per chair, 56—or less than ½ minute per weld. Courtesy: Metal Office Furniture Company, Grand Rapids, Mich., and Purity Cylinder Gases, Inc., Grand Rapids, an* ANACONDA *Welding Rod Distributor.* ANACONDA *Welding Rods are available from distributors throughout the United States.*

When you figure cost-per-joint, finished and ready to paint, you can't beat ANACONDA 997 Low Fuming Bronze Welding Rod. That's why the Metal Office Furniture Company, Grand Rapids, Mich., uses only "997" in braze-welding their "STEELCASE" furniture assemblies.

Used with an acetylene torch and vapor flux, the bronze readily tins the steel, feathers out nicely to form flat beads or smoothly rounded fillets. Every joint is dependably strong—and ready for painting with practically no finishing. With vapor fluxing there's no excess flux to remove.

The low-fuming characteristics of ANACONDA 997 Welding Rod permit faster welds and clean finished work. Insist that your supplier furnish you with genuine ANACONDA 997 Rod. If he can't, tell us. Please address The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ont. 50189

you can depend on ANACONDA®

BRONZE WELDING RODS

How to simplify your piping jobs ...Standardize on the CRANE line

No. 793½, Outside Screw and Yoke. Working Pressures: 25 pounds steam or gas; up to 50 pounds cold water. Sizes: 10 to 48-inch.

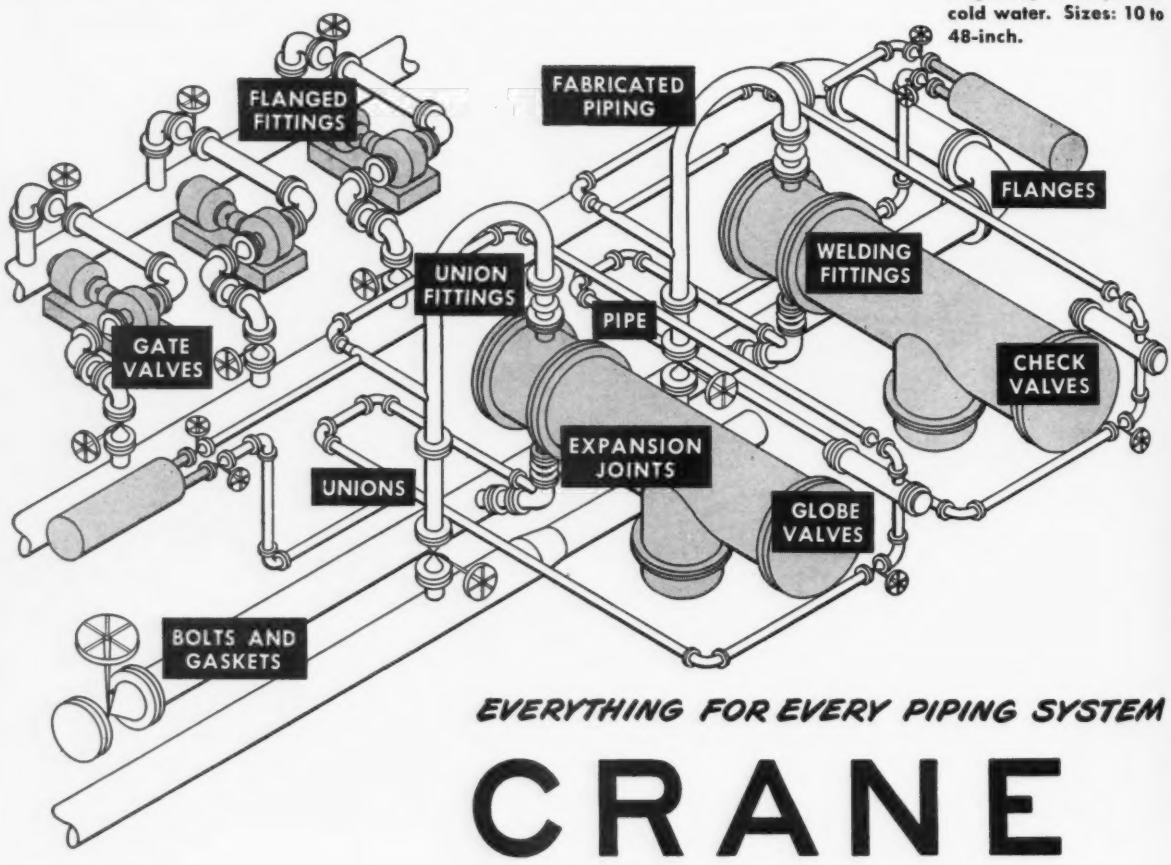
ECONOMICAL VALVES FOR LOW PRESSURES

Keep Crane 25-Pound Iron Body Double Disc Gates in mind for services that don't require the usual 125-Pound valves. Rated at 25 Pounds Steam or Gas, and up to 50 Pounds Water, depending on size, they give superior service in a wide variety of applications. Use them inside or out; their oval-shaped body and bonnet have ample reserve strength under line stresses. Short and compact, they take minimum space in pipe lines.

For durable, tight seating—yet easy opening—seat rings and disc faces are brass. Crane 2-piece ball-type gland maintains uniform pressure on packing; prevents binding on stem; lengthens packing life. When specified, these valves can be fitted with gears, by-pass, and clean-outs; also can be motor or cylinder operated; non-rising stem, flanged or hub ends, up to 36-in.; O.S. & Y. type with flanged ends only up to 48-in. See your No. 49 Crane Catalog.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

ONE ORDER TO CRANE COMPLETELY EQUIPS CIRCULATING, COOLING AND SERVICE WATER PIPING SYSTEMS



EVERYTHING FOR EVERY PIPING SYSTEM

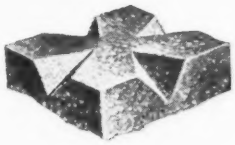
CRANE

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

Blue Temper

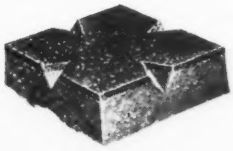
FEREM FLOORS

Tough Floors for Tough Conditions



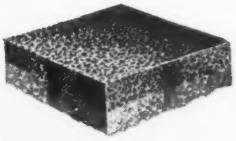
Cement

Notice the porous structure of the ordinary cement floor which is easily subject to crumbling by heavy traffic or shock loads as revealed by the carborundum wheel test.



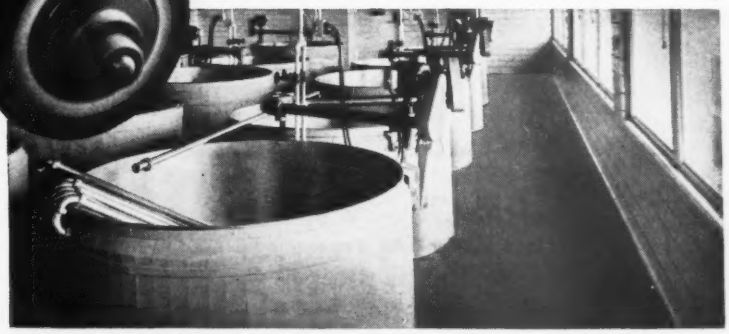
Metallic Hardener

In processed floors using metallic hardeners or metallic plating, the wearing surface is malleable but SLIPPERY and comparatively thin as the wheel test reveals.



Ferem "Blue Temper"

Ferem is the "Blue Temper" component. A dense, ductile and almost diamond hard floor surface results. NON-SLIP and highly wear resistant. The face of the test wheel polishes but does not cut.



20,000 lbs. of Ferem installed at the West Middleton Swiss Cheese Co.

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COMPANY_____

ADDRESS_____

CITY_____ STATE_____

NATIONAL DOES IT *ALL*

A cast steel ladle for use by a mining company is shown above and is being chipped prior to the finishing operation at National's Torrance Plant. This ladle is one of the many types of heavy manufacturing jobs that National puts out.

National has realized a great savings in time and expense for the manufacturer by having one big integrated plant . . . where everything is done from the electric furnace melting right down to the grinding and heat-treating operations. This means that from the time the order comes to us till the finished product is shipped, every manufacturing step is under the careful control of one organization.

Call us the next time you have a heavy manufacturing job or problem. In the meantime, write for your free booklet, "From Melting Furnace to Finished Product".

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MELTING • FORGING • CASTING • MACHINING
HEAT TREATING • ASSEMBLING • WELDING • TESTING

IN OUR MAILBOX

This Just Keeps Growing

Editor, Western Industry:

I enjoyed reading the January, 1950, issue of *Western Industry*. The article "Tide of Population Creates an Expanding Economy," which appeared on page 23 was particularly good. I would appreciate receiving a couple of reprints of this article if they are available.

JOSEPH W. EHRENREICH
Market Research Specialist,
The Prudential Insurance
Company of America
Western Home Office,
Los Angeles, Calif.

* * *

An Absorbing Issue

Editor, Western Industry:

The enclosed $1.05 is for an additional three copies of your January 1950 publication.

E. M. SKYTTA, Sales Manager
Reichhold Chemicals, Inc.
Seattle, Wash.

* * *

Another Booster

Editor, Western Industry:

Your January Annual Review and Forecast Number of *Western Industry* is certainly filled with valuable information, including your analysis of the Census of Manufacturers data for the Western states.

HERBERT F. ORMSBY, Director,
Research Department, California
State Chamber of Commerce,
San Francisco, California.

* * *

Storm Warning

Editor, Western Industry:

I am beginning to wonder whether we can keep living costs in the West on a parity with other sections of the country. I refer particularly to food and clothing, although we should realize that food and clothing costs are directly reflected in the cost of services also. In other words, with food and clothing higher in San Francisco than in Pittsburgh (Pa.), finally it's going to cost more to have a pair of pants pressed in San Francisco. Higher living costs could in the future affect population trends and industry expansion.

You are no doubt aware of the manner in which local consumption is outrunning local production of some agricultural commodities in the Pacific Coast and adjacent states. You are producing plenty of raisins, wine and nuts, but it won't be long until a part of the animal and animal product portion of your diet will be imported from east of the Rockies, or at least priced on import basis even though partially or mainly produced in the West. In other words, your pork and cheese will be priced on the Iowa or Wisconsin level plus carrying charges even though much of it may be produced in your area.

You probably have the figures indicating that harvested crop acreage has shown little, if any, increase in the states west of the Continental Divide during the past 20 years. There has been a small step-up in the last

More on page 21

EDITORIAL COMMENT

Its a Puzzle After All

HOW they do it is rather hard to figure. Our American business men are frequently held up to ridicule as mere children when it comes to foreign trade, and their "trade mission" visits to foreign countries (and to domestic areas also, for that matter) are often not much more than joy-rides. Yet they always come home with some bacon.

Take the "Friendship Tour" of Japan, Korea and the Philippines sponsored by the world trade division of the Seattle Chamber of Commerce, for example. What the excursionists did in Japan and the Philippines we do not profess to know. But we do happen to have information that they spent only two or three days in Seoul (pronounced like "sole," fillet of, or shoe, bottom of), the capital of Korea, of which one whole day was devoted to a pheasant hunt, and the rest of the time to formal banquetings, a bit of frivolous entertainment and a formal meeting with President Rhee and some of his leading officials.

Yet here is what the Seattle chamber reports:

"Sol G. Levy gives a glowing account of added benefits that are pouring in from the Orient as the result of the Friendship Tour. Innumerable letters are coming in from Japan, Korea and the Philippines. The Orient is sending samples of an amazing variety of goods for export to us—chinaware, paintings, hardwoods, canned foods, pearls, silks, etc.

"Food orders are being received from Korea, says Sol, and Yakima potatoes, fruits and other Northwest products already are moving into considerable tonnages bound for the port of Inch'un. The first steamship service between this country and Korea in 40 years has been established. Back our way from Korea will be coming lacquer, brass, ornaments, weavings, fish, and nut and other food products. And these will come through the port of Seattle, says Sol."

Perhaps when ECA money runs out it won't sound so rosy, but again ECA may in the long run prove to have been a satisfactory pump-priming operation. Nevertheless, when you hear close-up reports of what is happening to the money and material we are pouring into such countries, you don't feel so happy. However, the more "Friendship Tours" that we sponsor, the more we will understand about how things are done in the Far East.

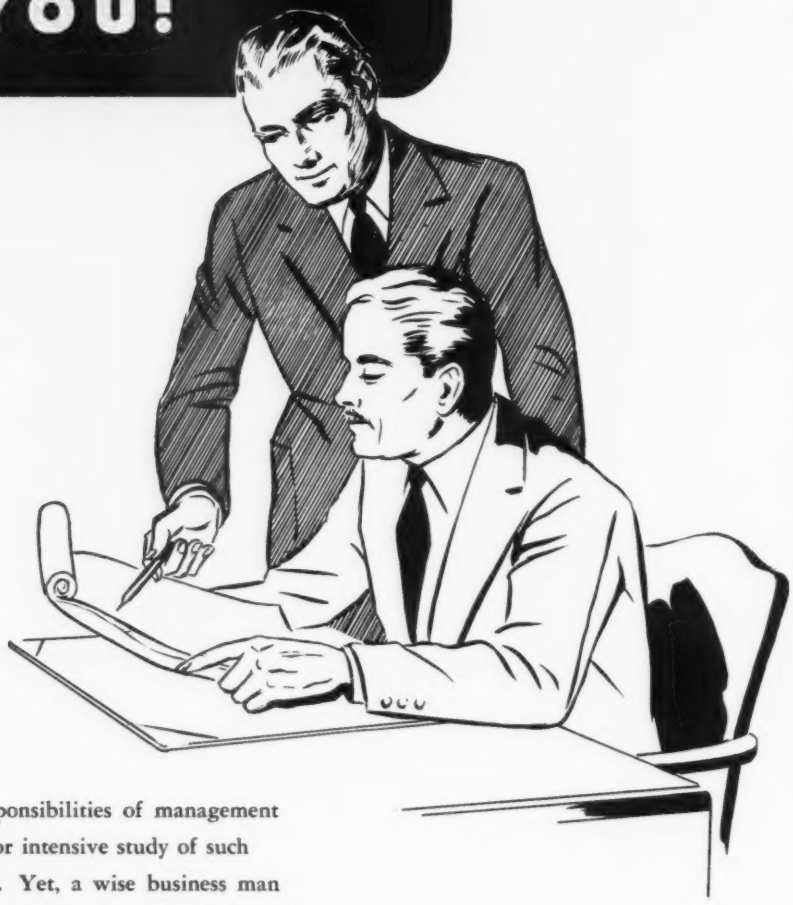
Which One, Senator McCarthy?

THE OTHER day we got a rush airmail letter from a manufacturer telling about a new appointment for his Los Angeles office. The envelope intrigued us greatly, because it had a string of words bordering the four sides, which (minus the various foreign "graves," "acutes," "circumflexes" and other markings unknown to English letters) were as follows:

"VIA AIR MAIL" "VIA LUFTPOST" "ORO PACTA" "AVIONOM" "ABOHOM" "LEGIPOSTA" "LUFTPOST" "CORREIO AEREO" "VERBY LUGPOS" "CORREO AEREO" "UCAK ILE" "POS KAPAL TERBANG" "ILMA POSTI" "PAR AVION" "ME ANEN POSTE ERORE" "PER VIA AREA"

Now, we would like to have Senator McCarthy advise us which one is the secret Communist sign that will tell us who hid Joe Stalin's whiskers in the U. S. state department?

THIS MAN IS IN BUSINESS TO HELP YOU!



The thousand-and-one responsibilities of management don't leave a lot of time for intensive study of such things as group insurance. Yet, a wise business man knows the importance of choosing the *right* plan for his organization. Your insurance agent or broker is an expert in the insurance field. He knows the various types of group insurance that are available, and can save you a lot of time and worry in making a wise selection. Call him in today! Let him *help! That's his business!*

GET *Better* ACQUAINTED WITH YOUR INSURANCE AGENT OR BROKER!

He Can Be a Valuable "Key-Man" In Your Business

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CALIFORNIA-WESTERN STATES LIFE INSURANCE COMPANY

MAIL BOX

Continued from page 19

10 years in some parts of the West but the increase has been in acreage seeded to wheat or cotton or dry peas. It just about offsets the acreage declines which took place between 1930 and 1940. This is an unwholesome situation and can only be remedied by accelerating construction on presently authorized large reclamation projects.

There are stirrings back here in important agricultural sections which I do not like, reminiscent of the late twenties. Stirrings of criticism regarding the present large expenditures for reclamation. Such criticism has been quiescent for many years; in fact, little has been heard on this score since about 1933 and 1934. The discussions now are the same, with some variations, which became so common and violent in the late twenties.

As you know, the country is wrestling with a surplus of several major farm commodities. The government is attempting to rig supply to demand by drastic acreage curtailment. Farm prices are falling. In such a climate it's difficult to convince a midwest or eastern farmer that some of his tax money should be spent to bring under irrigation additional lands in the western states. For instance, right here in Minnesota, in order to stay in compliance, we must reduce our corn acreage about 1.4 million acres in 1950. And large cuts are to be imposed on potato and wheat acreage. It is not easy to find a suitable substitute crop. The land to be planted to a less profitable crop or to remain fallow is $200-an-acre land, on which taxes are at least $1.50 per acre a year. In any event, if I read the signs right, and barring a disastrous drouth of the launching of World War III, a storm is brewing against the acceleration of the present reclamation program. At least its further expansion will meet resistance not heretofore encountered.

Crystal-ball gazing as to the future of the West must take this situation to account. Not only might the slowing down of the reclamation program impose still higher living costs in the future but there is the important consideration that an expanding agriculture widens the local consuming population base for western industries.

JOHN W. HAW, Director,
Agricultural Development,
Northern Pacific Railway Co.,
St. Paul, Minn.

* * *

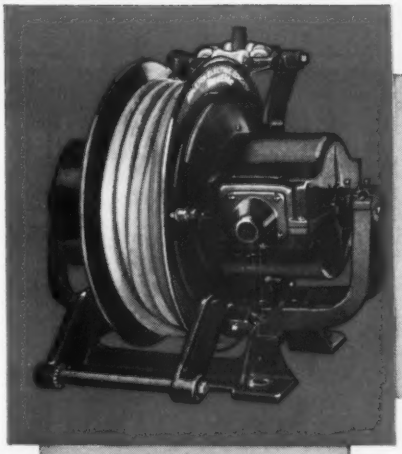
That's Our Job Too

Editor, Western Industry:

May I congratulate you upon the very interesting statement on forestry in the Pacific Northwest which appeared in your April, 1950, issue under the Seattle date line.

It is particularly encouraging to me, that the forest industries of the Pacific Northwest are getting recognition throughout the West and in other parts of the country of the progressive changes which have occurred in both attitudes and activities in regard to permanent forest management during the last decade. As one whose principal job is to interest timber landowners that growing timber is just as much a part of their business as harvesting and manufacturing it, we are always grateful for articles of the type I refer to in your April, 1950, issue, because it makes our job easier with our own people.

W. D. HAGENSTEIN, Engineer,
Forest Conservation Committee
of Pacific Northwest Forest
Industries,
Portland, Oregon.



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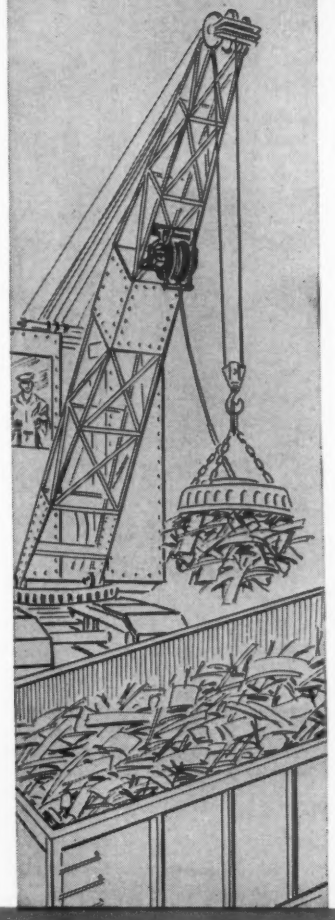

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Name_____

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CALENDAR OF MEETINGS

May—N. A. M. Oregon Industrial Leadership Conference, at Portland. Contact Jack Shields, BR. 2637, N.A.M., Pacific Building.

May 22-26—Western Conference on Apprenticeship, at Seaside, Oregon. Contact Convention Committee, Chamber of Commerce, Seaside.

June 2-3—Pacific Coast Conference of Controllers Institute of America, at Ambassador Hotel, Los Angeles. General Chairman is Rudolph Ostengaard, Assistant Vice President, California Bank.

ıne 19-21—Rocky Mountain Coal Mining Institute, at Hotel Colorado, Glenwood Springs, Colorado. F. W. Whiteside, secretary-treasurer, Equitable Bldg., Denver.

June 19-30—Institute of Northwest Resources, sponsored by Oregon State College at Corvallis. Dr. F. R. Zeran is director of the summer session.

June 22-25—Second National Truck, Trailer and Equipment Show at Pan Pacific Auditorium, 7600 Beverly Blvd., Los Angeles. Sponsored by Automotive Council of Los Angeles.

June 25-29 — Forest Products Research Society, at Multnomah Hotel, Portland. Contact Edward G. Locke, president, AT. 6171, U. S. Forest & Range Experiment Station, or C. W. Richen, BR. 6481, Housing Chairman.

June 29-July 1—National Industrial Advertisers Association national conference, at Hotel Biltmore, Los Angeles.

July 21-22—Pacific Society of Printing House Craftsmen, Multnomah Hotel, Portland, Ore. Contact Rudolph Ernst, Metropolitan Printing Co., 102 N.W. 9th Ave., Portland, BR. 2407.

Aug. 16-18—Western Packaging and Materials Handling Exposition, Civic Auditorium, San Francisco. Contact E. H. Heimer, 769 Monadnock Bldg., San Francisco.

Aug. 19-20—Statewide Air Freight Clinic. Hotel Claremont, Berkeley. Contact Aviation Committee, Oakland Chamber of Commerce.

August 21-25—Annual National Technical Conference of the Illuminating Engineering Society at Hotel Huntington, Pasadena, Calif.

August 28-31—Metal Mining Convention and Exposition at Salt Lake City. Contact Roy A. Hardy, Getchell Mine, Inc., Reno, Nevada.

Sept. 13-15—Pacific Electronic Exhibit (sixth annual) at Long Beach Municipal Auditorium. IRE coast convention concurrently.

Sept. 18-19—Western States Council, annual meeting, Reno. Contact Gus P. Backman, president, care Salt Lake City Chamber of Commerce.

Sept. 28-31—American Mining Congress—Metal Mining—at Salt Lake City, Utah.

TRIPLEX *Quality! Toughness! Economy!* in Threaded Fasteners

TRIPLEX manufactures threaded fasteners economically . . . yet maintains quality and toughness through its modern plant, efficient equipment and handling methods. Next time you're ready to buy threaded fasteners—write or wire for TRIPLEX prices.

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SET SCREWS
Sizes to ¾" x 4". Square heads, oval or cup points.

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Sizes to 1" x 60". Square, hex or countersunk heads.

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Sizes to 1" x 60". Standard round or special heads.

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Sizes to ¾" x 20". American and Manufacturers standard heads.

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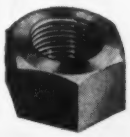
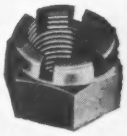
Sizes to ½" x 6". Round, flat or oven heads.

LAG BOLTS
Sizes to ¾" x 20". Standard square heads and gimlet points.



SEMI-FINISHED NUTS
Sizes to 1 ¼". American Standard heavy and light, full and jam sizes. Milled from the bar.



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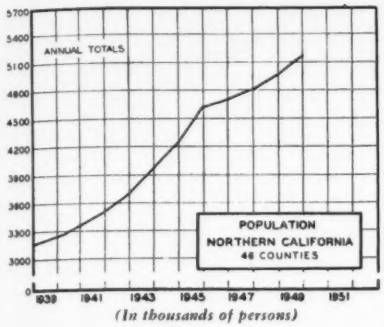
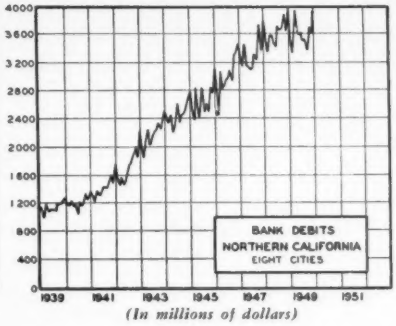
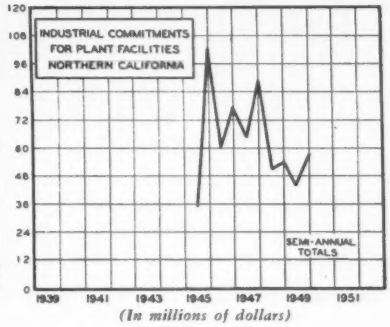
UNITED STATES STEEL



(In thousands of persons)



(In millions of dollars)



(In millions of dollars)

THREE charts shown above (prepared by Pacific Gas & Electric Co.) may help project some of the long range factors for one part of the West. Other areas probably will show similar trends.

But the short range factors are improving also, and seem to indicate a healthy condition and upward trends for the rest of 1950. Here are some of these straws in the wind:

California: 81% of the executives reported in a California Manufacturers Assn. membership poll expected their level of employment and volume of business for second quarter of 1950 would exceed same period last year (employment: 33% up, 19% down, 48% relatively unchanged; sales: 52% up, 19% down, 29% about the same). (CMA still fudging on this, because do 81% of the executives represent 81% of the employment and sales?). 36% said advertising and sales budgets would be up, 12% down and 52% about the same.

Manufacturing employment in California rose sharply in March (12,800) as contrasted with declines between February and March in each of the

Continued on page 27

Business Activity Indices

	1950 January	February	March
[1]Arizona	320 2	330.9	327.9p
[2]California	215.7	219.5	223.8p
[3]So. California	275.5	275.4	277.5p
[4]Pacific Northwest	199.9p	216.4p	.....
[4]Puget Sound	194.7	211.0	.....
[4]Inland Empire	186.9	199.2	.....
[4]Lower Columbia	212.5p	231.8p	.....

1. Valley National Bank (Phoenix) index, based on a weighted composite of retail sales, agricultural income, and employment in mining, manufacturing and construction, seasonally adjusted. 1940=100.
2. Wells Fargo Bank & Union Trust Co. index based on the following components: Industrial production, freight carloadings, bank debits, department store sales (weighted 4, 3, 2, 1, respectively, and adjusted seasonably).
3. Security-First National Bank of Los Angeles index, based on the following components and weights, and adjusted seasonally: department store sales, 15; building permits, 5; Los Angeles bank debits, 20; residential city bank debits, 5; agricultural city bank debits, 5; industrial employment, 20; industrial power sales, 13; railroad freight volume, 6; telephones in use, 7; real estate activity, 4.
4. Index compiled by Bureau of Business Research, University of Washington. Basis of compilation not indicated.

p. Preliminary estimate.

MANUFACTURING EMPLOYMENT

Estimated Number of Employees

Source: U. S. Bureau of Labor Statistics and State Agencies

	Mar. 1949	Mar. 1950
Washington	167.2	162.2
Oregon	112.9	117.7
California	690.3	699.1
TOTAL PACIFIC	970.4	979.0
Montana	17.1	17.1
Idaho	16.1	16.0
Wyoming	5.5	5.6
Colorado	52.5	52.5
New Mexico	9.8	11.1
Arizona	15.2	14.8
Utah	26.3	25.7
Nevada	2.9	3.0
TOTAL MOUNTAIN	145.4	145.8

FREIGHT

Cars of revenue freight, railroad carriers in 11 Western states

Compiled from Assn. of Am. R.R. weekly reports

	Carloadings 1949	1950	Received from Eastern Connections 1949	1950
March	447,250	431,699	266,919	265,519

TRUCK TRAFFIC

(Number of commercial trucks entering state through border checking stations)

	CALIFORNIA 1949	1950	ARIZONA 1949	1950
March	14,377	17,648	22,336	26,797

CONSUMERS' PRICE INDEX

From Bureau of Labor Statistics
100 = 5 yr. Avg. 1935-39

1949	Los Angeles	San Francisco	Portland	Seattle	Denver
Oct. 15	166.5	.....	173.6	.....	164.6
Nov. 15	166.6	.....	.....	171.6	.....
Dec. 15	165.4	171.5	.....	.....	.....
1950					
Jan. 15	166.9	.....	173.8	.....	.....
Feb. 15	166.1	.....	.....	171.6	.....
Mar. 15	165.9	172.3	.....	.....	.....

WHOLESALERS' SALES

In thousands of dollars. Percentage changes are from corresponding month of preceding year. From Bureau of the Census.

	Automotive Supplies	Change	Electrical Goods	Change	Furn. and house furn.	Change	Groc. and foods exc. farm. prod.	Change	General Hardware	Change
MOUNTAIN										
January	805	+ 9	2,691	0	.....	.....	.....	.....	966	—18
February	795	— 7	3,131	+ 6	804	+30	.....	.....	1,360	+ 1
1950										
PACIFIC										
January	1,902	— 9	10,943	— 2	2,411	+19	.....	.....	5,345	—15
February	2,892	+ 5	12,276	+ 7	2,508	+15	.....	.....	5,775	— 8

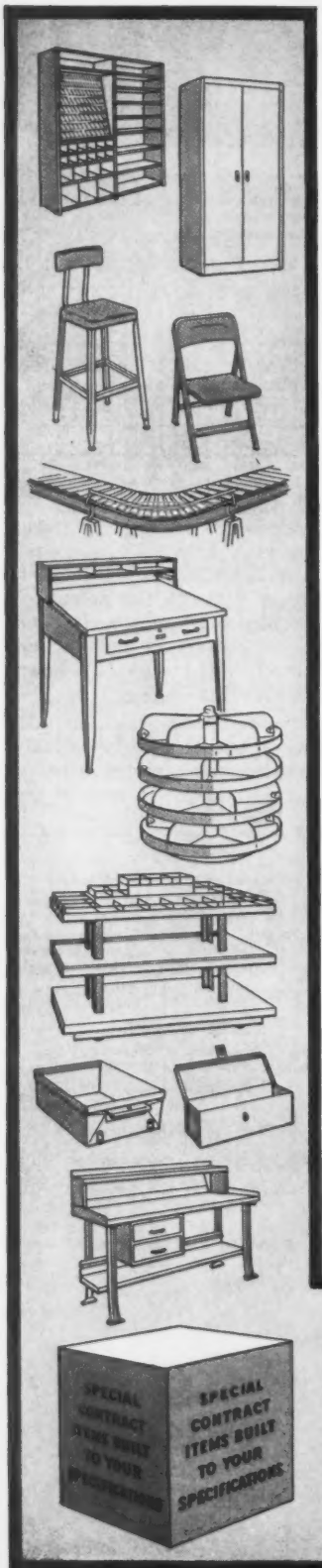
	Industrial Supplies	Change	Lumber and bldg. mat.	Change	Mch. equip. and supplies excl. elec.	Change
January	1,567	—13	1,893	+15	331	— 7
February	1,797	— 9	1,733	+27	397	0

INDEX NUMBERS OF WHOLESALE PRICES BY GROUPS OF COMMODITIES AND BY MONTHS

Bureau of Labor Statistics, Washington 25, D. C.

(1926 = 100)

1950	Farm Products	Foods	Hides and Leather Products	Textile Products	Fuel and Lighting	Metals and Metal Products	Building Materials	Chemicals and Allied Products	House Furnishing Goods	Miscellaneous	ALL COMMODITIES
January	155.3	154.7	179.3	138.5	131.3	168.4	191.7	115.7	144.8	110.0	151.6
February	159.1	156.9	179.0	138.2	131.2	168.6	192.7	115.3	145.0	110.0	152.7
March	159.4	155.5	179.6	137.3	131.4	168.4	193.9	116.3	145.3	110.7	152.6



LYON

the *FIRST* name in

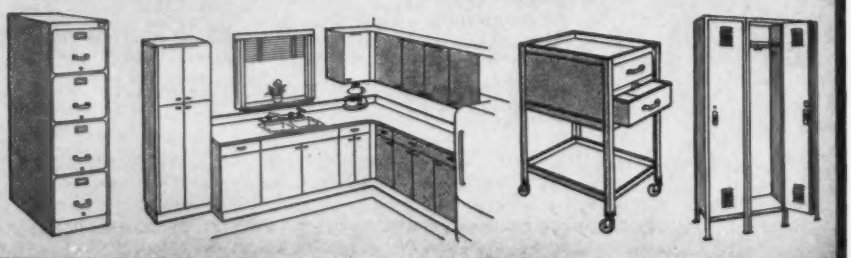
- Shelving
- Kitchen Cabinets
- Shop Equipment
- Chairs, Stools and Cabinets
- Lockers

LYON METAL PRODUCTS, INCORPORATED

LOS ANGELES	SAN FRANCISCO	PORTLAND	SEATTLE	SPOKANE
3650 Union Pacific Ave.	Room 421 Flood Bldg.	516 Pearsen 4th Ave. Bldg.	1755 Utah Avenue	814 Paulsen Bldg.

Shipment from Pacific Coast Points

General Offices and Main Factory: 640 Monroe Avenue, Aurora, Illinois



A PARTIAL LIST OF LYON PRODUCTS

- Shelving
- Lockers
- Wood Working Benches
- Economy Locker Racks
- Kitchen Cabinets
- Display Equipment
- Hanging Cabinets
- Welding Benches
- Filing Cabinets
- Cabinet Benches
- Folding Chairs
- Drawing Tables
- Storage Cabinets
- Bench Drawers
- Work Benches
- Drawer Units
- Conveyors
- Shop Boxes
- Bar Racks
- Bin Units
- Tool Stands
- Service Carts
- Hopper Bins
- Parts Cases
- Flat Drawer Files
- Tool Trays
- Desks
- Stools
- Tool Boxes
- Sorting Files
- Revolving Bins

Continued from page 25

last three years. Wells Fargo Bank index of California business shows upward climb through Feb. and March that puts 1950 ahead of two preceding years. Security-First National's index for Southern California up 3½% in March from a year ago, reaching highest point in 18 months. March unemployment for Los Angeles County 8% smaller than 1949. Tourists entering state by private auto and bus 9% more in Feb. and 3% more in March than last year, reversing downward trend.

Oregon: Rate of re-employment from winter dull period, averaging 5,000 weekly, ahead of last year, and predictions made that summer will see employment and payroll records broken.

Idaho: Construction activity the big factor in increased employment for 1950.

Montana: Upward trend in employment continues.

Utah: Copper production 24% up from year ago.

Building construction continues to zoom upward. Total for all reporting cities in seven Western states was $399,519,058 for the first quarter, highest in history and 30.4% greater than 1949, according to *Daily Pacific Builder.*

Electric Energy

Precipitation in the Colorado River watershed is reported below normal, and it is predicted that the run-off into Lake Mead will be 600,000 acre feet below the long-time average. Announcement that all firm power and irrigation deliveries will be met implies that the call for secondary energy will throw a heavier load on steam plants. As there is plenty of steam capacity available in California and Arizona, there is no danger of power shortage.

Heavy pumping in the San Joaquin Valley and an earlier lumber season in the Pacific Northwest may be partly responsible for the fact that March peak loads in California and Arizona were 8% and 11.6% above March, 1949, and energy demand 10.6% and 9.1%. New additions to capacity in the West are Unit No. 4 at Grand Coulee, 108,000 kw., P. G. & E.'s Moss Landing steam plant, 100,000 kw., and Utah Light & Power's Orem steam plant. Pacific Power & Light Company reports an over-all increase of 9.1% on its system in Oregon and Washington in 1949, divided as follows: residential, 11.6%; rural, 20.6%; commercial, 6%; industrial, 4.5%.

ELECTRIC ENERGY

(Production for Public Use—in thousands of kilowatt hours.)

(Source: Federal Power Commission)

	Feb. 1949	Feb. 1950
Mountain	1,423,744	1,496,666
Pacific Northwest	1,721,271	1,872,487
California	1,610,229	1,654,704
Total Pacific	3,527,231	3,331,500

Oil

Turn of the season finds the oil industry better off than a year ago, but how long this condition will last is dubious.

Long-term outlook is not so good:

1. Fuel oil inventories are still too large. The West Coast market is glutted.
2. Railroads continue to shift from steam to diesel, creating oversupply of heavier petroleum products and under-supply of lighter ores. Consumption of heavy oil has risen only 37% in the past decade, distillate 137%, gasoline 97%.
3. Spreading of natural gas pipelines transcontinentally means further inroads into fuel oil markets.
4. Imports are still rising.
5. The price structure has begun to wabble.

Short-term prospects are better:

1. Seasonal pickup in motoring will help bolster recently softening gasoline prices. (It will also mean, however, less demand for heating oils.)
2. Ships leaving Los Angeles Harbor have taken away 14,000,000 barrels of heavy fuel to the East Coast, with about 4,000,000 yet to go in the near future. This has relieved the glut somewhat, freed storage space, and liquidated working capital, although producers receive only about 70 to 80 cents a barrel, after shipping costs, as against $1.25 on the Pacific Coast.
3. There has been a slight stiffening of bunker fuel prices at East Coast and Caribbean ports.
4. Major companies continue to convert refineries, expensively, to turn out more of the lighter products.
5. California, only oil state without a conservation law, has lowered its crude output nearer the 850,000-barrel-a-day balance point where supply matches demand. Lately it has run about 859,000 daily barrels, down 100,000 daily from last year.
6. Having apparently squeaked by the seasonal period when gasoline inventories pile up uncomfortably, the industry appears to have dodged an apparently imminent break in prices.

PETROLEUM

(California, Oregon, Washington, Arizona, Nevada)

(From Bureau of Mines)

(In Thousands of Barrels Daily)

	Feb. 1949	Feb. 1950
Crude Production	947	864
Gasoline	13	13
Gas, Oil and Diesel	171	154
Heavy Fuel Oil	382	320
All Products	1,025	939

Big oil companies are telling their stockholders, however, that this can't last—that unless gasoline prices hold up, the weakening market for heavy petroleum produces will combine to force a sizable reduction in the price of crude oil.

With imports becoming a more worrisome factor, the coal industry has started worrying, too. The National Coal Association is imploring Washington to restrict oil imports, which it says are displacing 25,000,000 tons of coal annually as the principal fuel used under steam boilers. Now if John L. Lewis adds his pressure on Congress, perhaps lawmakers may act.

Coal

Production of commercial bituminous coal mines of the intermountain area slumped to around 60% of normal during April, which is expected to be the summer low. A seasonal pickup can be expected to start in early July. Steel industry captive mines were generally operating at a normal or above normal level.

BITUMINOUS COAL AND LIGNITE

(In thousands of tons—From Bureau of Mines)

	Feb. 1949	Feb. 1950
Colo.-New Mexico	573	133
Wyoming	531	114
Utah	716	45
Montana	248	232
Wash.-Alaska	118	70

Nonferrous Metals

The nonferrous metal production trend was upward during April. Stimulating factors included price increases for lead, zinc and copper, a heavy demand from the automotive, construction and electrical industries and low stocks on hand.

Major problem confronting zinc industry in 1950, according to Howard I. Young, president American Zinc, Lead and Smelting Company, will be a sufficient supply of zinc concentrates during last half of the year to maintain smelting production at or near capacity. In the last four years much of the smelting capacity has been engaged in conversion of government owned zinc concentrates, but the greater part will have been converted by end of the third quarter. In last four years the total stocks of zinciferous material have been reduced 42%. Zinc production in Rocky Mountain area for first half of 1950 expected to be substantially reduced on account of present lead prices. Mr. Young figures total recoverable zinc produced domestically this year as not far above 525,000 tons.

Aluminum

Primary aluminum production in March, 1950 hit the highest point, 112 million pounds, since the peak of 127 million pounds in March, 1948. This is about 18% to 20% above the 1949 peak. While a seasonal summer decline is looked for, it is not expected to be as low as last year, and fall may see another seasonal upturn better than 1949. The fall period is the heavy time for utensils

Continued on page 29

The day drudgery went out of style!

Problem: Housewives hated the drudgery and scrubbing needed to keep their home laundry clean. Manufacturers wanted easy-to-clean finish.

Solution: Industrial Finish Engineers put this drudgery out of style by developing a special finish for automatic laundry equipment and other appliances that can be cleaned quickly with damp cloth. This finish does not chip—is heat-resistant—takes less time to apply and dry than old finishes. A cost-saver.

Save time — cut costs through Industrial Finish Engineering!

This may be your chance to cut your manufacturing costs! Lower your break-even point! Save valuable manufacturing minutes!

Industrial Finish Engineering has done these things for many of America's leading manufacturers. Find out, today, what it can do for your product. Contact an Industrial Finish Engineer.

For the Finish Industry has technical ability to make finishes to suit the specific requirements that you need for your products. Remember, most of your customers *start buying with the finish in mind!*

The better the finish - The better the buy!

© 1950, National Paint, Varnish and Lacquer Association, Inc., Washington, D. C.

Problem: To find ways to decrease the unit cost of bicycles.

Solution: Industrial Finish Engineers developed a special finish that permits shorter baking time, cutting down production costs. This high-gloss finish has a permanently hard finish that is mar-resistant.

Problem: How to cut cost of wiring electronic devices.

Solution: Industrial Finish Engineers developed special metallic finish which is good conductor of electricity. This eliminates painstaking method of laying wires—saves production time—cuts costs.

Problem: To find an inexpensive way to give overshoes a gleaming surface.

Solution: Industrial Finish Engineers developed a special elastic, durable finish. This finish is baked on in the same operation that cures the rubber. Saves time. Saves money.

Continued from page 27

and appliances, helped out by speed-ups in building construction to get jobs finished before winter.

Steel

For pipe, sheets, plates and wire conditions are reported very good. For bars and structurals the picture is not so rosy, although the market has firmed up considerably in recent weeks. Steel for reinforcing and other construction is on a very competitive basis, and J. Phillip Murphy, president of Judson-Pacific-Murphy, of Oakland, one of the smaller coast mills, opened up the firebox back in Washington a few weeks ago for a blast to a Congressional committee that "Big Steel," especially Consolidated-Western and Bethlehem-Pacific cut the prices so low that the small mills could not operate profitably. Back in Mid-West territory "conversion deals" are reported in the offing, with some of the automobile manufacturers in a tight spot for steel supplies. Some foreign steel is being sold on the Coast, probably not more than 1% of the total consumption of the area (pre-war it amounted to about 2% to 3%), and foreign pig is arriving in larger quantities.

An all-time record of monthly shipments of steel was set in March by Columbia's plants, 62,947, topping the January, 1949, peg of 62,519 tons. Pittsburg produced 30,444 net tons of steel ingots; best previous was 29,536 tons in March, 1948. Also 16,519 net tons of sheets; passing January, 1950, figure of 10,981 tons.

Aircraft

Recent press accounts of huge new aircraft orders created the impression that fat contracts have been placed which will mean immediate expansion of West Coast plants. Actually, these orders have trickled out over the past six months, meaning that no major boost in employment is at hand.

Among them, however, are some interesting additions. North American's order calls for 15 more "A" bomb carriers, which have two piston engines and a jet engine in the tail. Douglas's order for F3D Skynight two-engine jet fighters nearly quadruples original plans, and its contract for Skyraider propeller attack planes will be boosted to more than 1,000 ships. Lockheed gets more long range anti-submarine aircraft, more Shooting Star jets, and a two-place trainer known as T-33.

The industry also is retailoring a number of its best planes for better performance. Republic's Thunderjet fighter is having its range stretched to more than 1,000 miles. Northrop's F-89 Scorpion jet interceptor's power is boosted by addition of afterburners, giving the little ship more power than a railway locomotive. The Air Force plans to "soup up" the B-36 with swept-back wings and new supersonic propellors to raise its speed to 550 m.p.h., and its ceiling from 45,000 to 55,000 feet. If this works, the proposed B-52 may be dropped. Lockheed is lengthening its Constellation transport 18 feet to take a maximum of 110 passengers. Boeing plans to put turboprop power on its Stratocruiser and its military counterpart, the C-97-A Stratofreighter, giving the double-decker greater speed, operating altitude, and hauling capacity.

Aeronca soon will go into quantity production of the Helioplane, a stall-proof, spin-proof ship of slow landing speed. First models will go mainly to selected users, mostly industrial.

IRON AND STEEL

WESTERN AREA OF THE UNITED STATES

From American Iron and Steel Institute (in net tons)

	Mar. 1949 Output	Mar. 1949 Per Cent of Capacity	Mar. 1950 Output	Mar. 1950 Per Cent of Capacity
Pigiron Output	235,176	95.0	153,575	54.4
Steel Output	451,926	101.0	391,286	80.8
Alloy Steel Output	8,127	.....	7,157	.....
Carbon Ingots, Hot Topped*	13,896	.....	4,725	.....

*Included in total steel.

Lumber

Market is strong and bullish, a trend that has been continuing now for some months. Mills have very good order files and practically all mills are operating at normal capacity. There have been some closedowns, but for reasons of short log supply rather than lack of business. Log inventories are low, in most grades and most regions, because of the unusually severe winter and backward spring. Much logging is at the higher elevations these days and therefore the snow line is more of a consideration in getting back into the woods after winter. Most camps in the lower lands along the Coast are now in operation (as of May 1) but some, operating in high country in the Cascades, have not been able to start even yet.

About 75% of the U. S. operations in the Douglas Fir region of Western Washington and Oregon were estimated in production at end of April. Cedar logs are scarce and shingles market is very strong with present prices running around $10 per square now as compared with $6.50 last August. High number of new business starts, is a big contributor to strong demand and firm price.

WEST COAST LUMBERMEN'S ASSOCIATION

	March 1950 Aver. Per Wk.	1950 13 Weeks M Feet	1949 13 Weeks M Feet
Production	205,817	2,149,629	2,166,238
% 1945-1949 Yrs.	126.3%	101.4%	102.2%
Orders	224,489	2,741,897	2,360,480
Shipments	218,105	2,380,613	2,140,667

Pulp and Paper

Industry-wide picture for Washington, Oregon and British Columbia is very strong. Mills are all on 7-day schedule. Order files are heavy and production in some cases is sold into first quarter of 1951. Prices are firm and stable and no changes in prospect for second and third quarters of 1950. Only dribbles of Scandinavian pulp are coming in, dictated by necessity of getting some U. S. dollars. Swedes and Finns, lacking other fuels during war, made heavy inroads into wood supplies and are now short of timber. Their pulp production now is going heavily to the Soviet Union.

Paper mills and also paper converters are in excellent position and report a heavy emphasis now on quality production. Pulpwood prices are holding firm in view of the tight log market in lumber and plywood industries. Two new large pulp mills are currently under construction, and both mark the venture of lumber companies into the field of pulp. They are: Potlatch Forests, Inc., building at Lewiston, Idaho, and the MacMillan interests building a bleached kraft mill near Nanaimo, B. C., Canada. A third large mill, to manufacture dissolving pulp, is scheduled for early construction at

Continued on page 31

PULPWOOD

(Pacific Northwest)

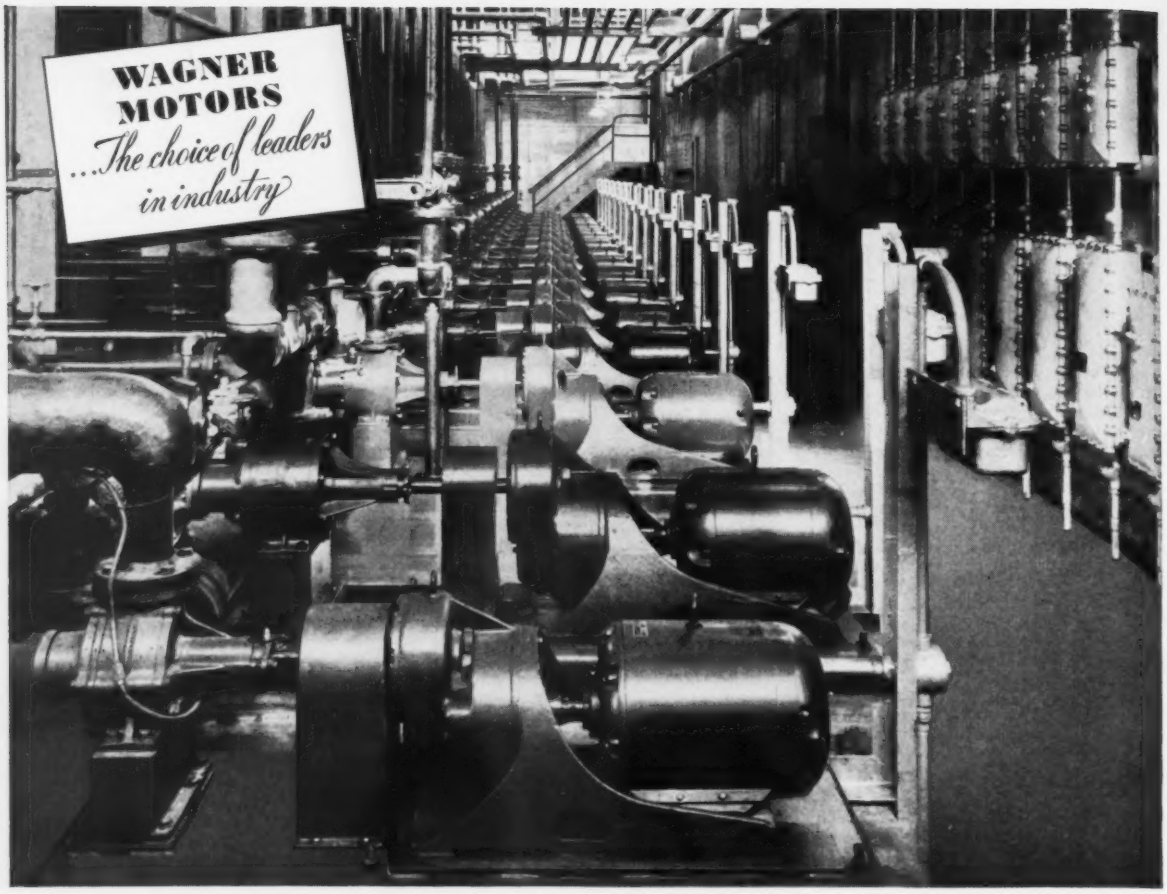
(Cords of 128 cu. ft., roughwood basis. Source: Bureau of Census)

	Feb. 1949	Feb. 1950
Receipts	31,976	130,636
Consumption	260,689	285,550

AIR FREIGHT

(In pounds. Figures from airports)

	Los Angeles In	Los Angeles Out	San Francisco In	San Francisco Out	Oakland In	Oakland Out	Portland In	Portland Out	Seattle In	Seattle Out
1949										
October	1,466,002	1,526,568	1,137,901	1,269,481	116,344	171,614	.....	.....	463,149	885,980
November	1,300,850	1,391,597	967,135	1,075,337	102,351	150,148	.....	.....	.....	.....
December	1,511,280	1,495,057	.....	.....	126,828	155,506	.....	.....	483,843	792,960
1950										
January	1,139,500	1,064,212	855,863	929,761	210,615	158,460	.....	.....	392,850	621,221
February	1,027,146	1,086,299	814,706	1,179,674	107,182	158,467	.....	.....	.....	.....
March	1,235,068	1,330,344	1,012,229	1,245,260	137,671	253,652	.....	.....	.....	.....

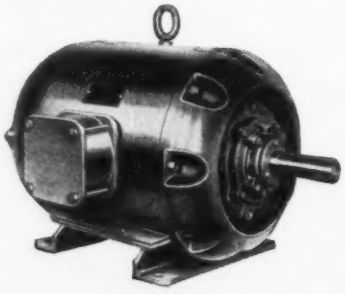


Wagner *explosion-proof* motors provide *safe, sure,* power for Sinclair

The Sinclair Refining Company in Houston handles almost every type of oil and gasoline imaginable . . . even producing coke from petroleum, which closely resembles coal coke, and is used by steel plants in their open hearth processes. The latest addition to this refinery is a barrel house and grease plant where products from the refinery are compounded and canned.

Shown above is a row of the pumping units that handle all the various oils from the refinery field which are brought into the barrel house for compounding and storage. The entire installation is powered by dependable, efficient Wagner Type HP Motors, is explosion-proof, and each pump is individually push button controlled.

Wagner Type HP Motors are approved by Underwriters Laboratories for Class I Group D hazardous locations . . . they are fully protected against adverse conditions . . . and they are always reliable. If you need motors for use where explosive gases, fumes, vapors or combustible substances are present, investigate the many advantages of Wagner Type HP Motors. Bulletin MU-185 gives full information.



Wagner Electric Corporation
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ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES
AUTOMOTIVE BRAKE SYSTEMS — AIR AND HYDRAULIC

BRANCHES IN 31 PRINCIPAL CITIES

Continued from page 29

Prince Rupert, B. C., by Columbia Cellulose, Ltd., a subsidiary of the American organization, Celanese Corporation.

Plywood

Order files are still well filled for about 60 days ahead and the industry as a whole, despite the very large additions to capacity in the last few years, is running at good capacity. Prices are still a bit bullish and favoring the seller, but there is indication of leveling out on a high plane. Price situation is much less erratic than one or two months ago. The log situation is still very tight and the slow breakup of a very bad winter has prevented rebuilding of log inventories. Long range trend in plywood is to production of greater percentage of water-resistant grades, suitable for use under all conditions, but the trade resistance of custom prevents any quick shifts. Experiments are continuing with new type facings of metal, glass, plastics, etc., but this evolution, too, will most likely be gradual.

SOFT PLYWOOD

From Bureau of the Census

PRODUCTION

(in thousands of square feet)

	1949	1950
February	143,180	178,080

Furniture

Furniture makers are sharing other industrial difficulties with rising transportation costs.

A proposal advanced before the California State Public Utilities Commission calls for putting uncrated furniture shipments by truck on a basis of so much per 100 pounds, whereas most carriers had been granting piece rates, which were lower.

Effect would be to restrict the marketing radius of manufacturers in the state's two main industrial centers, and the burden would bear especially on southern producers of bedroom and living room furniture. The industry is objecting, through its Association, with some support from retailers.

Within recent months the industry has been affected also by elimination of l.c.l. exception rulings, which are gradually forcing many Eastern manufacturers to use pool cars. In this field the West already has pioneered and its extensive use of pool car shipping has helped substantially to maintain its competitive position with larger and older firms in the East.

Canning

Prospective admittance of Alaska to statehood will no doubt mean prompt outlawing of fish traps, mostly owned by large operators who reside "in the States." This prospect is already being reflected in increased interest in boat building.

There is very little carryover of last year's salmon pack, except in pink salmon, which last year came in with an unexpected very heavy run in southeastern Alaska late in the season and materially changed the statistical picture for the year. Heavy consumption season is approaching and buyers

are active, with apparently very small stocks on hand. New pink pack will not be on the market until about September. Copper River area in Alaska, producing top grade Sockeye and Chinook reds, was scheduled to open May 1 but on eve of opening no agreement on fish prices had been reached with fishermen and delayed opening, as has happened before, was in prospect. Bristol Bay area in Alaska expects an off year as it isn't the year for the fish to run.

Cannery operators are moving ahead full blast with preparations for the season now. Labor problems, which have been knotty in recent years, are still present. A ship loaded with cannery supplies for Kodiak Island was unable to unload because of a dispute and had to sail unloaded. Organized Alaska salmon industry, spokesman group for the packers, has actively opposed granting of statehood to Alaska under present bill in recent Senate hearings.

There has been also some concern about Russian imports of canned crab meat from the Siberian shores of the Pacific. Pre-war, Japan had built up a near monopoly on this tidbit, but the war permitted the industry to get a better American foothold. The Soviets now control much of the crab fishing grounds once held by the Japanese and they are feeling out the U. S. market.

Flour and Feeds

Tidewater mills in the Northwest, which enjoyed an important pre-war Oriental market for flour, are running about one-third of capacity. Have lost most of California market, also. Picture is very much confused but it mostly adds up to the fact that if the sundry political programs were removed and the industry left to find its own competitive markets that situation would be much improved. Reduced flour production has cut down output of by-product feeds, running the prices of those items up so that poultry population has fallen off 50% since the war. Some increase in imports of foreign-origin feeds is noted.

WHEAT FLOUR

In thousands of sacks

(From Bureau of the Census)

	Feb. 1949	Feb. 1950
Oregon-Washington	1,388	933
Montana	236	279
Utah	269	297
Colorado	366	251
California	353	345
TOTAL	2,612	2,105

Chemicals

Dwindling away of soybean oil in the vegetable oil processing plants in California is shown by the following figures on consumption of soybeans, reported by the Census Bureau:

	Tons
1948	11,599
1947	7,366
1946	78,152
1945	52,336
1944	67,798

In the production of phosphate fertilizer, however, the West is forging ahead, with two Idaho plants turning out more than is used by all the farmers of eight Western states combined.

Apparel

Firm tendencies continue in textile goods, with wools and cottons advancing slightly and rayons apparently at the end of their long down-trend. Effect on apparel manufacturers is to hint strongly that material costs are due to rise.

Compensating somewhat is willingness of some unions to accept slightly lower wages, with the provision that their employers guarantee a stated amount of employment. At Los Angeles, where this offer was made by ILGWU, no action has been taken, employers having disbanded their Cloak and Suit Manufacturers Association, leaving individual members free to act as they see fit.

Hanging over the heads of unions and employers alike is the unpromising sales picture. If volume could be maintained, the industry would be glad enough to absorb higher costs—but as it is, women's wear is not experiencing demand enough to maintain past high production schedules. Business is relatively dull, with no hint that next season will be any better.

BANK DEPOSITS

(In millions of dollars—adjusted)

Average of daily figures. All member banks in the 12th Fed. Res. District. Demand deposits, excluding U. S. Government deposits, cash items in process of collection, and interbank deposits.

	Mar. 1949	Mar. 1950
Net Demand Deposits	8,760	8,649
Time Deposits	6,124	6,290

CONFECTIONERY AND COMPETITIVE CHOCOLATE PRODUCTS

(From Bureau of Census)
(In thousands of dollars)

	COLO. - IDAHO - UTAH		— WASH. - OREGON —		— CALIFORNIA —	
Month	Sales	Per Cent Change from same month of Preceding Year	Sales	Per Cent Change from same month of Preceding Year	Sales	Per Cent Change from same month of Preceding Year
September	593	*	573	+ 9	2,009	— 8
October	683	—15	577	+ 6	2,613	—11
November	861	—12	781	—11	3,038	— 9
December	654	—20	583	—13	2,515	+ 2
1950						
January	479	—17	501	—19	1,906	—18
February	464	— 9	456	+10	2,005	—11

*Change of less than 0.5 per cent.

Working Together for Faster Steel Service

Here's the team that swings into action the moment you contact a Ryerson plant. From the phone girl who receives your call to the driver who delivers your order it's a team of specialists who take pride in the job of getting steel to you quickly.

As soon as we take your order, duplicate copies are rushed to every person concerned and scheduling is completed simultaneously for all departments to prevent the slightest delay. In the warehouse, experienced steel men select your requirements from certified quality stocks. Carbon, alloy and stainless steels on hand in most every size, shape and finish make it easy for you to concentrate purchases—save time and develop lower costs. Then flame-cutters flash . . . friction saws roar . . . shears and punches crash. Your steel is prepared to exact specifications and rushed to the shipping floor according to schedule. A waiting truck speeds the steel to your door.

That's Ryerson steel service—a remarkable example of teamwork that enables us to ship steel in any form, to any place, in record time. Whenever you need high quality steel—need it fast—we urge you to call our nearest plant.

PRINCIPAL PRODUCTS

CARBON STEEL BARS—Hot rolled & cold finished

STRUCTURALS—Channels, angles, beams, etc.

PLATES—Sheared & U. M. Inland 4-Way Safety Plate

SHEETS—Hot & cold rolled, many types & coatings

TUBING—Seamless & welded, mechanical & boiler tubes

ALLOYS—Hot rolled, cold finished, heat treated

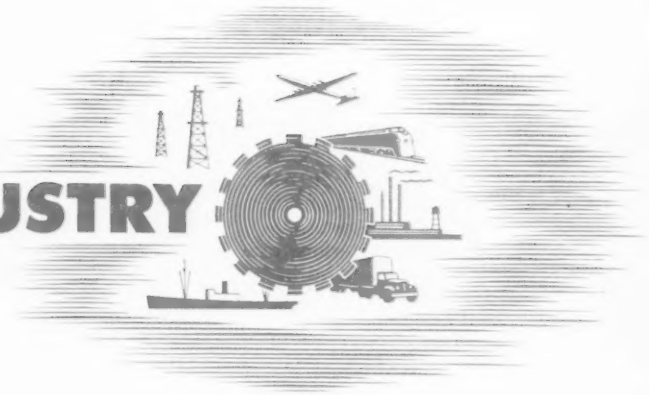
STAINLESS—Allegheny bars, plates, sheets, tubes, etc.

MACHINERY & TOOLS—For metal fabrication

RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. LOS ANGELES PLANT: Box 3817, Los Angeles 54, Calif. Plant: 4310 E. Bandini Blvd. Phone: ANgelus 2-6141. From San Diego (No toll) Phone: ZEnith 6660.

SAN FRANCISCO PLANT: Box 188, Emeryville. Plant: 65th & Hollis Sts. Phones: OLympic 3-2933, ENterprise 10176.



Kirksite Dies May Offset the West's Short-Run Handicap

PRODUCTION executives in the West, whose efforts to develop volume production have been handicapped by the high cost of steel dies, may find encouragement in the new Kirksite die process, which promises to enable many smaller plants with short runs to compete against the mass output of large Eastern establishments.

The story of this development at Douglas Aircraft may also give them renewed confidence in ideas of their own for by-passing historic methods that have tended to put the Western manufacturer at a disadvantage.

Four trends of considerable significance to industry in the West seem to be evident in the recent formal announcement by the Western Pressed Metals division of Douglas Aircraft, Inc., that it is inviting job stamping business. All but one of these trends have been forecast in *Western Industry*, two of them as far back as 1944.

The Trends

First is the fact that this operation is based mainly on the use of Kirksite dies, which make it possible to meet the high cost of steel dies by greatly improving the life of sand-cast zinc dies without reducing the speed and simplicity inherent in the sand-cast technique.

1944: We Forecast

(From July, 1944, issue of *Western Industry*)

"Flexibility of the tooling developed by the aircraft industry in California . . . and the use of the drop hammer and Kirksite dies would permit rapid development of a postwar automobile or any other product you have in mind."

1947: Need Revealed

(From July, 1947, issue of *Western Industry*)

"While aircraft industry leaders have been crying their eyes out back in Washington . . . automobile procurement men on the Pacific Coast have been wondering why these aircrafters seem to pay no attention to the opportunity of making automobile bodies as one means of keeping themselves in hamburgers."

1947: Smoke Screen?

(From August, 1947, issue of *Western Industry*)

"I noticed your suggestion that the aircraft industry might build automobile bodies rather than weep about lack of aircraft production. We think there are enough people in the automobile body business, we have no equipment suitable for body production, we don't know the business, so if we had some ham we would have some ham and eggs if we had the eggs.

"F. W. CONANT,
Vice-President, Manufacturing
Douglas Aircraft Co., Inc."

Second is that the field of automobile body stampings has been invaded for the first time on any important basis by a West Coast manufacturer. This adds a powerful impetus to the development of automobile parts manufacturing in the West, which the Ford Motor Company vigorously began to promote in 1947 with its West Coast Parts Procurement Program and has consistently followed up ever since.

Third is the element of flexibility in metal fabrication that it introduces. The use of Kirksite dies thus may have far-reaching effects in enabling Western manufacturers having shorter production runs to offset the competition of Eastern manufacturers who can produce in greater volume because of proximity to mass markets.

Fourth is an element of greater stability injected into aircraft manufacturing, lessening the industry's dependence on government orders by providing a backlog of other work not tied to the ups and downs of the aircraft industry.

A Necessity

It became apparent early in the war that a cheaper die with a longer production life and a greater resistance to deformation than was available in sand-cast zinc dies was a necessity for the manufacture of aircraft. In answer

to this need, the product of a Los Angeles firm, Morris P. Kirk & Son, Inc., came into use in almost all plants in the mass production of aircraft. This was a lead-base alloy known as "Kirksite A."

After the war, Douglas Aircraft kept on with the research it had pioneered, and about three years ago Harry Woodhead left the presidency of Consolidated-Vultee Aircraft Co. in San Diego to head up this work at Douglas. He possessed the necessary metal fabrication background, for previous to being president of Convair, he had been vice-president of Federal Pressed Steel Co., general works manager of A. O. Smith Corp., vice-president of Midland Steel Products Co., vice-president of Truscon Steel Co., and president of Aviation Manufacturing Co.

The Pressed Metals Division was organized in August, 1948, and the war-time techniques have been further developed to the point of producing quality steel stampings in runs of up to 50,000 pieces. While Mr. Woodhead declines to discuss details of the techniques, auto fenders and other deep-draw stampings, to which he points with pride, speak eloquently for the successful results of that skill and knowledge.

There's Something Here

"Even skeptical automobile manufacturers, who eschewed the use of so-called 'short-run' die materials, are taking another look at Kirksite," Woodhead declares. "The quality of the work we have turned out for them has brought re-orders and indications of still wider use of our facilities."

Some of the big fabricators in the East and Mid-West, he points out, also have learned that use of Kirksite dies is not necessarily limited to runs of 300 or 400 pieces.

Mr. Woodhead makes it clear he doesn't believe Kirksite is applicable in all cases. "But whenever we are considering a new part," he says, "we first study the possibility of producing it with Kirksite."

Why is the lead-base alloy considered so desirable by Western Pressed Metals? Low cost probably is the first, but by no means the only consideration. The cost of a Kirksite die, with the salvage value taken into account, is about one-tenth that of a similar hard die. Salvage is high because the dross loss in remelting is very slight, making it possible to use the same metal repeatedly.

Because of low initial cost and speed with which dies can be produced, Western Pressed Metals finds sizable economies may be effected even if several sets of identical Kirksite dies are used on extended runs.

Time Elements Slashed

Die-making speed also is an important consideration when early delivery of stampings is a factor. As an example, Mr. Woodhead reveals his organization was able to promise finished parts to a major auto manufacturer within 90 days, as compared to other estimates of one year by fabricators using steel dies.

• This automobile fender is made of 20 gage cold rolled steel, formed by a Kirksite die. It is only one of a number of automobile parts that can be made on short production runs in the West up to 50,000 pieces or more with a possible saving of up to 75% in elapsed time in making deliveries to customers.

In industries which require annual modifications in design, the possibility of effecting a 75 per cent time saving would be a major sales factor, he points out. Rapid production by Kirksite dies also is useful in getting pilot models of new designs before sales organizations and the public for appraisal before the finished product design is frozen.

Basic characteristics of Kirksite "A," which have made it extremely useful to Western Pressed Metals Division of Douglas are:

Basic Characteristics

Excellent casting properties in any type of mold.
Ease of welding, machining and polishing.
Physical properties approaching those of mild steel.
Self-lubricating properties with freedom from galling and scratching.
A low melting point and low dross losses on remelting.

Western Pressed Metals has used Kirksite dies to form a variety of products on virtually any type of press equipment—hydraulic presses, drop hammers and stretch presses. Kirksite

• Ceco drop hammers used by Western Pressed Metals division of Douglas Aircraft Co., Santa Monica, Calif. These hydraulically-operated machines have die areas from 26 x 30 in. to 60 x 90 in. They can turn out practically any kind of a stamped metal product, buttons to bathtubs.

• This object is part of an oil tank, formed on Kirksite dies. It illustrates the ability of these composition dies to do deep draw work and perform a highly acceptable job, whether the material to be worked is steel or nonferrous. And the shop can keep pace with the design engineers.

rolls also are used on certain types of form rolling and tube-bending machines.

The flexibility in metal fabrication previously referred to is not entirely a metallic proposition. It may be a freedom from tradition prevalent in the aircraft industry, as was significantly pointed out in the July, 1944, issue of *Western Industry*. In an article headed "Automobiles? Perhaps The West Can Build Them Better," the late Thomas A. Watson, then educational supervisor in Engineering-Science-Management War Training at UCLA, was quoted as saying at a Southern California Management Conference:

No More Boxcar Figures

"One of the difficulties experienced by the automotive people in tooling for aircraft was their practice of thinking of numbers of parts in the hundreds of thousands, when in the case of aircraft manufacturers, the number of parts to be made were in the thousands.

"The designers and the toolmakers in that part of the country designed and fabricated all tooling Class A, which, when completed, could produce hundreds of thousands of parts identically. With the frequent engineering changes demanded of them in the construction of aircraft, the minds of the tool designers and tooling men in the Middle West almost snapped, because of the time and the cost of changes in Class A tooling. They lacked flexibility of tool design.

Here's an Example

"Let me use one example to make this point clear. It was decided to contract the design and fabrication in the Middle West for tools needed to form the instrument panel for one of our large bombers. The sub-contractor returned an estimate of $25,000 for the tools to do the jobs. Due to the pressure of time, the tooling was designed and made in Southern California for this panel and at a cost of less than $1,000.

"Now the importance of this example is only to call attention to the flexibility of the tooling developed by the aircraft industry in California. The tooling developed here for this job would not produce more than 10,000 parts before encountering trouble. The number of parts that could have been produced on the tooling designed in the Middle West would have been closer to a million parts.

"Before 10,000 parts were made, however, an engineering change was made which called for a complete redesign of the dies in question."

In forecasting the possibility of complete automobiles being manufactured in California, Mr. Watson said, "As far as sheet metal is concerned, any of our large aircraft plants could do this job when properly tooled . . . The use of the drop hammer and Kirksite dies would permit rapid development of such an automobile or any other product that you have in mind. Technicians have developed the use of the drop hammer in coordinating the parts for assembly to a point that is something to be admired."

Whether the late Mr. Watson was entirely a visionary in his prediction that the Middle West might some day no longer be the exclusive manufacturing area for automobiles, only time will tell.

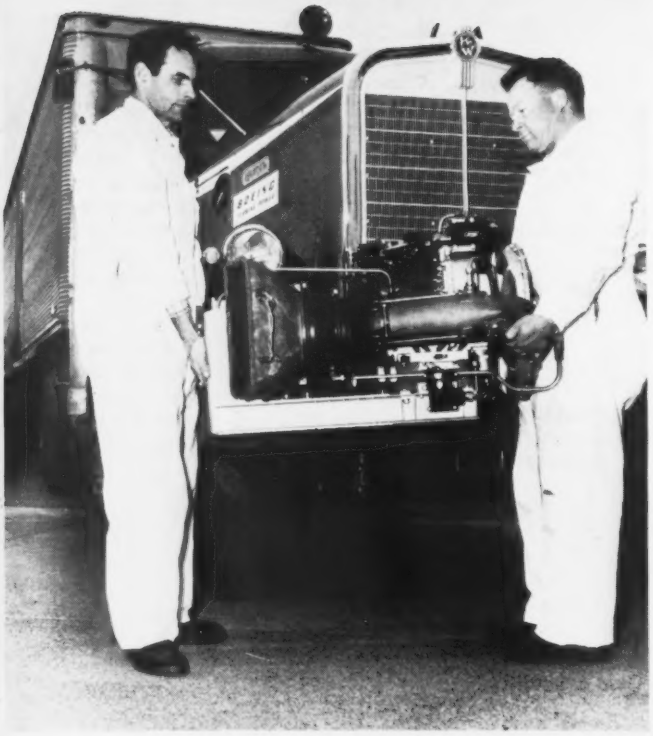
The fact that the Douglas organization, at least, is alive to the need and opportunity in the aircraft industry for developing unrelated business that could keep the plant running regardless of government subsidies or other unfavorable aircraft conditions is indicated by a Western Pressed Metals brochure issued by Douglas late in March.

Soup to Nuts

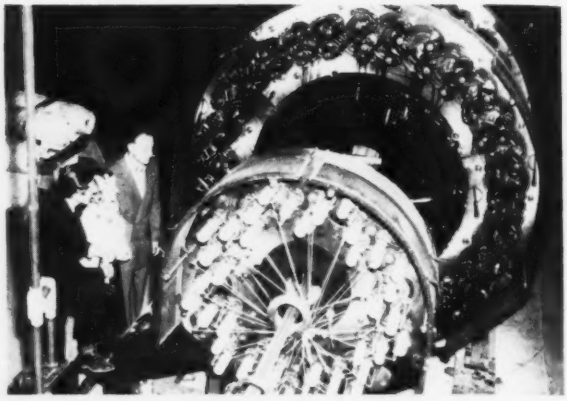
This brochure is replete with illustrations of presses of all sizes in the three Douglas plants at Santa Monica, Long Beach and El Segundo, plus pictures of drop hammers, shears, power brakes, roll forming machines and seam, spot and flash welders, with a statement that the WPM division is prepared to handle "almost any type of metal fabrication—every step of the way."

• It may look like a graveyard, but it is an easy and efficient way to store dies. The crane can pick out any die needed on very short notice, with a minimum time curtailment of production. This method of metal fabrication is a boon to shops with seasonal production problems or to do hurry-up jobs.

WESTERN PROCESSES AND PRODUCTS in Today's View



SEATTLE, WASHINGTON—Boeing gas turbine engine weighs only 200 lbs., delivers 175 hp., takes 13% of space normally used by conventional truck engine. New design allows extra payload and comfortable cab-over-engine steering on those long hauls.



NEPHI, UTAH—We didn't know what this was, either, until the Thermoid Company told us it is a 60 carrier wire braider for making high pressure wire braid hose. Here is an example of industry growing up and making an economic entity of the West.

PORTLAND, OREGON—This state increased population by 59.3% in the ten years from 1939 to 1949. That means more household goods to be manufactured. George Montag (right) checks on a new electric stove design at Montag Stove Company.

POCATELLO, IDAHO—The fertilizer business is an Idaho mainstay, since the phosphate deposits are found there. Simplot Company is taking advantage of the state's natural resources, and continually improving operations through mechanization.

Only Four People . . .

Needed to handle accounting and control details for 12 production locations and 22 distributing yards

By W. L. NEIL
Secretary-Treasurer,
Pacific Coast Aggregates, Inc.
San Francisco, California

MUSIC, machines, air conditioning and a handful of people are responsible for the efficient—and unusually economical—handling of all accounting and control detail in connection with annual sales that exceed $10,000,000.

In fact, punched-card equipment and procedures provide all of the sales and cost analysis statistics, invoices, statements and other records and enable us to do business with an accounting department staff of four. And the whole cost of the punched-card program amounts to approximately 3/10 of 1 per cent of our gross business. The music and the air conditioning—mental and physical "atmosphere" we create for our eight punched-card operators—add another infinitesimal fraction to the costs.

Extensive Operations

Pacific Coast Aggregates sells building materials, crushed rock, sand and gravel, transit-mixed concrete, and building specialties to several thousand regularly active retail accounts and quite a few hundred wholesale and production companies. We operate 12 production locations and 22 distributing plants or yards, adding new lines and new locations in the post-war years to meet annual demands consistently exceeding the figures mentioned above.

It is certainly noteworthy that for such volume of business our accounting department consists of only four people. That is entirely possible because punched-card methods prepare business records and reports in considerable volume, promptly, accurately, and in essentially usable form.

Cost Equals 12 Clerks

The punched-card or tabulating department, as it is usually identified, consists of five operators, two code clerks and a supervisor. We use approximately 100,000 cards a month, and the cost of these plus the rental of the machines is the equivalent of four clerical salary units, bringing the total operating cost for the department to a figure comparable to the pay of 12 clerks. This means that the card cost and machine rental amounts to 1/10 of 1 per cent of our sales volume, and the labor cost is 2/10 of 1 per cent of our sales volume.

Our tabulating department produces customers' statements, and a wide variety of reports, including sales analysis statistics, truck performance records, the payroll, accounts payable checks and records and profit and loss reports for analysis and presentation to the management by our accounting department.

"Oomph" Is Provided

Because the activities connected with operation of the punched-card procedures are almost entirely mechanical, with the exception of the initial punching of the cards which serve to actuate the various high-speed machines, and because we firmly believe that a pleasant place to work is a decided help to all-round efficiency, we gave the tabulating department offices a bit of extra "oomph." These ultra-modern offices have music service, air conditioning and sound deadening ceilings.

W. L. NEIL

The Remington Rand equipment used in our tabulating department includes an Alphabetical Tabulator (which prints both letters and numbers), a Summary Punch which automatically punches summary cards; a Multi-Control Reproducing Punch, a Sorter and three Automatic Punches.

Chief among the activities of the tabulating department is that which results from the punching of a detail card for every item on all the sales tickets—between 25,000 and 35,000 sales tickets per month, with an average of 2.5 items per ticket.

Each detail card is punched to show the yard number, customer number, production number, unit cost, quantity, discount, tax, delivery detail and total amount. Code abbreviations are used in some of these classifications.

The detail cards are used with the Alphabetical Tabulator to prepare two copies of what we term a sales analysis report, on the fourth or fifth working day of each month. One copy goes to the sales division, where it is duplicated and reported on for use by the management. The second copy is for the accounting section.

25,200 Per Hour

The same cards, run through the high-speed sorter for rearrangement in whatever order is desired and at the rate of 25,200 cards per hour, are also used to make these subsidiary reports (printed automatically on the tabulating machine): (1) Sales tax reports for city and state; (2) delivery reports; (3) destination reports; (4) salesmen's reports by territories (covering direct sales), and cost-of-sales reports.

These, together with the monthly sales analysis give our figure-minded president and other executives a wide range of easily-reviewed information for analyses and planning.

There is hardly any element of our figure work that is not closely touched—and greatly speeded—by our punched-card procedures, including inventory control, truck performance records, accounts payable, payroll, profit and loss statements and cost finding. In touching briefly on the procedures followed in each instance

PROFIT AND LOSS STATEMENT
BY LOCATION

ACCOUNT NO.		AMOUNT	T		T	
			G		G	
1	WET MIX SALES	200536025	CT		CT	
1	COST	142713977	T		CT	
		57822205	CG		CG	
3	AGGREGATE SALES	13348346	CT		CT	
3	COST	10824667	T		CT	
		2523468	CG		CG	
4	BLDG MTR SALES	13560753	CT		CT	
4	COST	10933526	T	8661780	CT	GROSS PROFIT
		2627227	CG		CG	
			T		CT	
			CG		CG	
318 8	DEL COST WET MIX	3751360	T		T	
318 9	AGGREG	346564	T		T	
31810	OTHER	2391457	T	4337069	T	DELIVERY EXPENSE
		4337069	G		CG	
			T		T	
			G		CG	
31926	LBR TAX INSURANCE	1031301	T		T	
31928	SUPERINTEND LBR	305142	T		T	
31929	MAINTENANCE LBR	32105	T		T	
31935	SUPPLIES AND EXP	2368977	T		T	
31936	FUEL	10456	T		T	
31937	POWER	86810	T		T	
31939	MAINT EXPENSE	124319	T		T	
31945	INSURANCE	59242	T		T	
31946	TAXES	233326	T		T	
31947	RENT	54968	T		T	
31970	ABATEMENTS	2941700	CT	1880398	T	
		1880398	G	2444313	CG	PROFIT BEFORE DEPR.
			CT		T	
			G		CG	
31848	DEPRECIATION	582034	T	582034	T	
		582034	G	582034	G	

• This is a sample of an Inventory Turn-Over Report as it comes from being printed on the Alphabetical Tabulator shown below.

I will try, too, to give a brief picture of some of the direct benefits.

Overtime Is Down

Through the application of punched-card procedures to payroll preparation, for instance, we have saved a great deal of overtime. Centralization and mechanization have done that by giving us closer check and better control through detailed analysis.

We have two payrolls; a weekly one for the distributing yards and a semi-monthly one for the producing plants and the office force. The alphabetical tabulator prints a payroll register and the checks and stubs for approximately 700 employees. Through the use of these and other cards we are also able to prepare automatically our Social Security, W-2 withholding tax and other reports.

Our truck performance reports are prepared each day and show the performance of each truck by yards or producing plants. Each driver and helper turns in a report of the hours and minutes for which he is to be paid, and the reports show for each truck the revenue time divided into loading, travel and unloading, with the total minutes, the stand-by time and the maintenance labor.

Detailed Analysis

The detailed report of truck revenue and truck expense is combined by the accounting department with other cost items in preparing its reports for the transportation and executive departments.

Through the inventory control detail quickly made available to management by means of the punched-card procedure, there is no question but that more prompt production of accurate information *by locations* has served to help us clear slow-moving items and increase the procurement of fast-moving products. Inventory balances, purchases, transfers and sales shipments at cost punched cards are combined by product number and a summary is produced on the tabulating machine by product number and name.

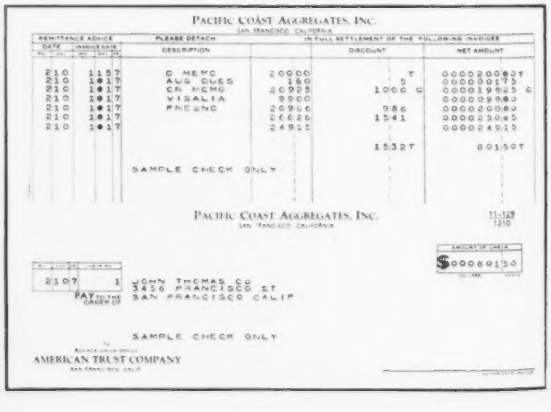
Inventory Control

Some of our inventory control information is obtained as a punched-card by-product of the monthly handling of accounts payable. We punch a tabulating card for every expense and re-sale item on our voucher and these are used for distributing and totaling these amounts on our accounts payable reports. Then we punch total cards and tabulator print 1,200 checks a month to pay these vouchers. Payments are made three times monthly.

From the accounts payable cards we tabulate a report of purchases and expenses by our 22 yards and 12 pro-

• Alphabetical Tabulator and Summary Punch. Report above.

• Account payable check from cards on the tabulator (left).



PACIFIC COAST AGGREGATES, INC.
SAN FRANCISCO, CALIFORNIA

REMITTANCE ADVICE — PLEASE DETACH — IN FULL SETTLEMENT OF THE FOLLOWING INVOICES

DATE	INVOICE DATE	DESCRIPTION		DISCOUNT		NET AMOUNT	
210	1157	D MEMO	20000		T	00002000	2T
210	1017	ANG DUES	160		G	00000175	
210	1017	CR MEMO	20928	1000	G	00001992	5 G
210	1017	VISALIA	9900			00000990	0
210	1017	FRESNO	20916	986		00002004	0
210	1017		26626	1541		00002504	5
210	1017		24915			00002491	5
				1532T		00150T	

SAMPLE CHECK ONLY

PACIFIC COAST AGGREGATES, INC.
SAN FRANCISCO, CALIFORNIA

11-169
1210

AMOUNT OF CHECK
$000801 50

2107 1

JOHN THOMAS CO
3426 FRANCISCO ST
SAN FRANCISCO CALIF

PAY TO THE ORDER OF

SAMPLE CHECK ONLY

AMERICAN TRUST COMPANY

INVENTORY TURN-OVER REPORT

PROD.		BEG. INV. T G	PURCH & END. INV. T CG	SALES AT COST T G
802	CON REINFOR MESH	128590T	121576CT	7014T
1001	WIRE NETTING	196437T	170209CT	26228T
1002	METAL LATH	101080T	73640CT	27440T
1003	CORNER BEAD	38729T	32334CT	6395T
1004	PLASTER LATH	12168T	15372T	27540T
1006	STEELTEX	28050T	6350CT	21700T
1401	RUBBER TILE	341858T	321691CT	20167T
1501	ASPHALT SHINGLES	305368T	53760CT	251608T
1502	RL ROOFINGS	218356T	160949CT	57407T
1503	BLDG PAPERS	4600T	3910CT	690T
1504	SHEATH DEAD FELT	42723T	27705CT	15018T
1505	BLT UP RFG MATLS	247648T	114160CT	133488T
1507	ASPHALT COATINGS	125267T	69680CT	55587T
1508	ASPHALT	45585T	43089CT	2496T
1509	CEM ASBEST SHING	22893T	10239CT	12654T
1510	RICHKRAFT	256726T	228866CT	27860T
1511	ALUMI SHIELD CTG	T	14700T	14700T
1601	GYPSUM WALLBOARD	113696T	23597T	137293T
1604	FIBR INSUL BOARD	211439T	164776CT	46663T
1605	APS PLASTEEL	8099T	6480CT	1619T
1606	MARLITE	105930T	96068CT	9862T
1607	PREDEC GYP WLBRD	25049T	23345CT	1704T
1611	STYRON TILE	211T	CT	211T
1701	PAINTS	35985T	35251CT	734T
1702	ADHESIVE	9080T	9080CT	CT
1704	MARLITE ADHESIVE	4361T	2976CT	1385T
1706	MIRACLE ADHESIVE	98T	CT	98T
1707	ADHES CONCR SEAL	8439T	1971CT	6468T
1709	COOLITE	T	31175CT	31175CT
1710	MARLITE POLISH	T	734CT	734CT
1801	DUST STOP FILTER	315247T	39312CT	7788CT

• Profit-and-Loss statement prepared (by locations) automatically on tabulating machine from punched cards. For executive reports.

ducing plants, with a breakdown of the figures for each yard or plant.

Earlier Billing

By means of the tabulating equipment we are able to produce our customers' statements at least three days earlier each month, and since we give a cash discount for payment by the 10th many customers have come to depend on our statements—for their timely arrival and their accuracy.

Each day all customers' invoices are computed on adding machines which provide control tapes for quantities, sales tax, discounts and amounts. Our tabulating department punches a card for each invoice, showing the gross amount and discount. These cards are intersorted with balance forward and payments cards for the same customers, and on the third day of the following month we prepare the statements on the alphabetical tabulator.

A combination of the detail and summary cards, already punched for other control operations, are used to prepare the profit and loss statements on the tabulating machine after they have been automatically arranged in proper groupings on the sorter.

Down to Fine Points

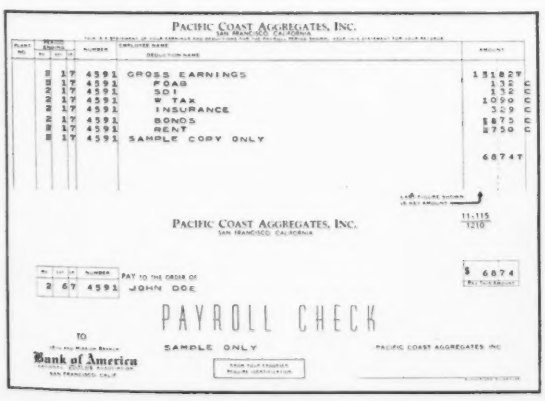
The summary cards are arranged in the three main divisions of the profit and loss figures—those for wet mix concrete, aggregates (sand and gravel) and building materials. Summary cards are punched for the sales and the cost of sales of each of these classes for each of the 22 yards. These cards are then sorted in with other expense cards (such as truck operations) and the payroll cards.

Then a profit and loss report for tion for general ledger postings and preparation of executive reports.

The economies, speed and efficiency the past month, and for the year to date is printed on the tabulating machine, by individual yard and plant. A copy is given to the accounting sec- of the punched-card procedures have been throughly demonstrated to our management in the operations touched upon in the foregoing. But the advantages do not end there, for after all these activities—in which many of the key functions are performed as by-products of still other important controls—there are many ways in which we further make use of our cards. By way of conclusion, I will cite one general instance:

The call for special reports from time to time shows the value our executives place on the re-use of punched cards to secure unusual combinations of facts which will help in making the correct executive decisions. This flexibility of operation has not only helped us to handle easily an increased volume of business at less cost but it has done so despite rising prices.

• Payroll check. Machine turns out a carbon copy for records.



PACIFIC COAST AGGREGATES, INC.
SAN FRANCISCO, CALIFORNIA

2	17	4591	GROSS EARNINGS	15182Y
2	17	4591	FOAB	132 C
2	17	4591	SDI	132 C
2	17	4591	W TAX	1090 C
2	17	4591	INSURANCE	329 C
2	17	4591	BONDS	1875 C
2	17	4591	RENT	4750 C
2	17	4591	SAMPLE COPY ONLY	
				6874T

PACIFIC COAST AGGREGATES, INC.
SAN FRANCISCO, CALIFORNIA

11-115
1210

PAY TO THE ORDER OF
2 67 4591 JOHN DOE

$ 6874

PAYROLL CHECK

TO
Bank of America
SAN FRANCISCO, CALIF.

SAMPLE ONLY

PACIFIC COAST AGGREGATES, INC

• Here is where the cards are translated into punched holes.

Is Your Product One of the 2.7 Considered by Each Buyer?

It will pass inspection if you engineer your advertising thoroughly and tool every opportunity to shape the buyer's mind

By GEO. C. McNUTT
Geo. C. McNutt, Advertising
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PRACTICALLY every manufacturer selects machine tools with loving care. Advertising is a tool, which if properly used, shapes buyers' minds as a machine tool shapes metal.

The chief purpose of advertising (with the exceptions of mail order and some institutional advertising) is to make the work of your salesmen more effective by enabling them to produce more per call, just as machine tools enable shop workers to produce more.

In short, advertising is a way of mechanizing your selling—there can be no profits without sales. Therefore, it is important that you use as much judgment in studying and buying advertising as you would in selecting a new machine tool.

Here are the points that will help you make and keep your advertising a sharp, volume-building sales tool:

Have Definite Objectives

Know what you want your advertising to do. Sure, your main objective is increased sales, but the more specific you can be the better planning and copy you will get from your advertising manager and agency. Let's take a couple of examples.

Almost two decades ago a California inventor, R. G. LeTourneau, introduced a new earthmoving scraper that would handle much of the work then done by shovels and trucks. To sell scrapers, he first had to sell the tractor-scraper method of earthmoving. This then was the objective of LeTourneau advertising for several years.

About the same time Walter P. Chrysler introduced the Plymouth car. He believed if buyers would compare the Plymouth with Chevrolet and Ford he would make a lot of sales. His advertising objective was to sell the idea of "*compare all three.*"

Why settle for "advertising just to keep your name in front of the public" when you can make your advertising really work by setting up definite objectives? Your sales situation naturally will determine the advertising objectives. We list a few obvious objectives just to help your thinking:

To introduce new products.

To emphasize your strong points.

To sell a process that utilizes your products.

To establish yourself as a leader.

To sell the ability of your consulting staff.

Remember, your advertising may have several objectives, but make sure you and the persons who handle your advertising know what they are and are in agreement on the relative importance of each objective.

Know Your Prospects

This sounds obvious and is, but many manufacturers have hazy ideas about who really specifies or authorizes the buying of their products. The National Industrial Advertisers Association's recent survey of industrial buying practices, covering purchases of equipment, materials and component parts, shows that an average of only 2.7 makes are considered for each purchase made. To increase your chances of being included in the 2.7 makes, you should do your level best to reach all the buying and specifying factors.

GEORGE C. McNUTT

Media Selection

So know your markets, then determine who gets in on the buying—engineers, top management, operating personnel, purchasing agents or just who. The subject of market and buying factors is too big to cover in this article, but you can get help from such sources as your trade associations, the U. S. Department of Commerce, your advertising agency, trade magazines, research organizations, and from your own sales force and sales records.

Select advertising media that reach your prospects. When studying magazine circulation, count only that part which will help *you*. Maybe your product is used in the construction field and you have determined that the job superintendents and top management are the buying factors you have to sell. In such a case, you count as effective circulation the subscriptions of those men only. Or possibly you have no distribution in the New England and Atlantic Coast states. Then in comparing papers, you count as effective circulation only that portion in the states where you have distribution.

Editorial Content Vital

Remember, too, that circulation means little if the paper isn't read. So study editorial content. Do the papers you are considering for your advertising schedule carry editorial matter that is *interesting and helpful* to your prospects? If the answer is "yes," then your advertising has a

good chance of being seen and read by the persons you want to reach.

Ask for Action

Don't be afraid to ask for the order in your advertising copy. Decide what you want the prospect to do, then ask him to do it:

"Fill in the coupon below NOW!"
"See your nearest dealer TODAY!"
"Compare Soso Widgets with any widget at any price."
"Telephone our dealer TODAY for a free demonstration."
"Ask our engineers to help plan your plant layout."

Make it easy for the reader to take action by such devices as listing your dealers, using a coupon, referring to the telephone book classified section, including telephone numbers and addresses of branches, telling what type of outlets handle your products (at your grocers), and so on.

Follow Up Promptly

When the prospect takes action, be prepared to follow up. Folks hate to be ignored—slow inquiry handling is just as maddening as neglect by clerks in a store. So, when you offer literature, consulting service, a free demonstration, or further information, be ready to deliver. We know a company that lost several large sales because its engineering staff didn't realize or appreciate the importance of answering requests for estimates promptly. Another firm received 150 requests for literature on a new piece of heavy equipment, had to keep them waiting six weeks while the literature was being printed. Better check your follow-up system before you say it couldn't happen in your company.

Sell Advertising Program

Tell the sales force about your advertising program—sell it to them. The main purpose of advertising is to make their sales job easier. So tell them what you're going to do and why you're doing it that way. Let them in on the why and wherefores of copy and media. A good way to do this is to send your salesmen and dealers preprints of your ads and mailing pieces together with an explanatory letter or note—and do it before the ads appear in the papers. There are few things more embarrassing to a salesman than a conversation that goes like this:

Customer: "Say what's the dope on this deal your company's just announced?"

Salesman: "What deal?"

Customer: "The one it tells about in this ad right here."

Salesman (trying to cover-up): "Lessee it. Guess the dope must have gone astray when I changed hotels in Cucamonga."

Ask Yourself These Questions If You Want to Increase Your Advertising's Sales Productivity—

Does my advertising have definite objectives?
Do I know my prospects?
Do the media on our lists cover and interest the prospects we want to reach?
Does our copy ask for action?
Are we prepared to follow-up inquiries?
Is our sales force sold on the advertising program?
Do we measure advertising results?
Is the budget used solely for advertising?

It only costs a little in time and money to keep the sales force informed about your advertising. If you do the job right, they will see your advertising is a sales tool designed to increase sales volume.

Measure Your Results

It's fairly easy to measure results in the consumer goods field, but even in the industrial field you shouldn't be content to spend your money and just hope. Many business men (including advertising men who ought to know better) say it's practically impossible to show results from industrial advertising. Don't you believe it. Industrial advertising effectiveness can be measured, if you are willing to give some time to it.

American Coach and Body Co. in Oakland, California, did it by offering two accessories in the side panel of a full-page ad. Requests, leading to actual orders, quickly indicated the ad had been read.

Western Machinery Company, San Francisco, after advertising a new product, checked results by having a magazine on its schedule mail a post card to every tenth name on the subscription list, asking the recipient to identify the new product and its manufacturer.

William A. Marsteller, vice-president in charge of advertising and marketing research, Rockwell Manufacturing Company, in a talk last year listed 17 methods his company and its subsidiaries had used to prove the effectiveness of its advertising campaigns. In a pamphlet titled "The Power of Industrial Advertising . . . Faith . . . or Fact?" The National Industrial Advertisers Association lists 13 methods to use in measuring the effectiveness of advertising as a sales tool. Copies are available from NIAA Headquarters, 1776 Broadway, New York 19.

Confine Budget to Advertising

Use your advertising budget for advertising; don't kill it with charity. The general manager of a Midwestern firm once told me my advertising costs were growing too fat. So I began checking and found various executives authorizing space in charity programs, labor papers and fraternal organs, all of which, along with several association memberships, were charged to advertising. After the situation was pointed out, a "Donations and Good Will" account was added to the company's overall budget and advertising funds used henceforth strictly for advertising. I have even seen flowers for funerals charged to advertising by at least two well-known Bay Area firms.

If you are in doubt about what legitimately belongs to advertising, write Printers Ink Magazine, 205 East 42nd St., New York 17, and ask for the black and white list of advertising appropriations. It will be a helpful guide to you, your advertising manager and your comptroller.

After your media selections are complete, make sure your advertising message is suited to the readers of the media. If your sales story is the same to all markets and buying factors, then it may be possible to use a single advertisement throughout all the papers on your schedule.

Conversely, if you should stress one set of ideas and features to loggers, for example, and another set of ideas to heavy construction contractors, then don't try to use the same advertisement for both types of prospects. The extra time and money you spend to gear your message to the two different fields, will be worth much more than the costs of producing an extra advertisement.

Remember, your salesmen vary their story to fit the prospect. So must your advertising be varied to fit the audiences of the different papers on your schedule.

Get Good Admen

Finally, select your advertising manager, and agency, with care. Take them into your confidence by giving them full data on your sales plans and hopes. Only in this way can your advertising be aimed at the same targets your salesmen shoot at. Put competent men in charge, give them a fair share of your budget, plus information to work with, hold them responsible for results, and you are likely to get good results.

Dispatching station at Friden Calculating Machine Co., San Leandro, Calif. Dispatcher at left is filling out "shop move" tickets, while a dispatcher from another station (at the right) is busy scale-counting the parts.

Production Control: The Key to Lead Time and Smooth Flow

HOW FAR has the West advanced in the application of production control to its manufacturing operations? Some indication of the real answer may be found in this installment of *Western Industry's* survey of operating and management methods in 211 Western manufacturing plants of various types and sizes. The survey began in our March issue and will continue for several months more.

75% Have Programs

Three-fourths of the plants reported having production control programs. In general, these programs cover scheduling and expediting in about the same proportion, but routing and dispatching to a lesser extent.

Only about two-thirds of the plants seemed to know, however, what their actual machine efficiencies were, which would seem to allow considerable room for improvement. When it came to knowing what the machine efficiencies should be, the showing is better, because three-fourths of them had this information, or at least said they did.

What Production Control Does

What is production control? It may be defined as that function in management which coordinates materials and the work done on them so as to achieve an end product of desired quality ready for shipment on time.

How does it accomplish this result? Here are specific examples:

1. It regulates the flow of work so as to give both purchasing and production departments lead time.
2. Enables management to tell whether pre-production planning has been translated into action.
3. Provides the most economical lot size.
4. Anticipates emergency runs, thus eliminating the need of stopping regular runs and destroying set-ups to take care of the emergency call.
5. Reduces many top-level decisions to routine and clerical operations, thus lightening the load on executives and supervisors.
6. Saves carrying excessive inventories.
7. Helps to prevent shortages of materials.
8. Permits inventory count at all stages of production.
9. Assists the purchasing department in deciding when to buy, when not to buy, and from whom to buy.
10. With the cooperation of Inspection, reveals what quality of material is being received from vendors.
11. Allows more intelligent cost analysis.
12. Ties directly into quality control, by aiding in eliminating production snarls that interfere with quality.

How many of the 211 plants reporting in *Western Industry's* survey of methods and systems have production control programs? 150 say Yes; 55 say No

Designations "Western," "Eastern" and "Mixed" indicate whether methods and systems were independently developed in the West, or formulated by eastern management or parent company, or are a combination of both. Numbers indicate number of plants.

Southern California

	Yes	*No*
Western Methods	27	3
Eastern Methods	5	3
Mixed Methods	4	....

Utah

	Yes	*No*
Western Methods	14	4

Northern California

	Yes	*No*
Western Methods	20*	1
Eastern Methods	4	....

*Ten plants report "Limited program."

Oregon

	Yes	*No*
Western Methods	14	10
Mixed Methods	2	....

Western Washington

	Yes	*No*
Western Methods	41	30
Eastern Methods	3	2
Mixed Methods	4	....

Idaho

	Yes	*No*
Western Methods	4	....

Eastern Washington

	Yes	*No*
Western Methods	2	2
Mixed Methods	1	....

Colorado

	Yes	*No*
Western Methods	5*	....

*One plant reports: "Based on sales, inventory (both actual and planned)."

THIS is the fourth installment of *Western Industry's* survey, carried in cooperation with eight universities in the West and a number of management consultants, to assemble facts concerning actual operating conditions in industry in the West.

Reports were obtained from 211 plants in California, Oregon, Washington, Idaho, Utah and Colorado through a detailed questionnaire, covering division of functions, organization charts, communications, manufacturing programs, controls and budgets.

In order to determine the comparative efficiency of industry in the West and the older industrial areas of the country, the reporting plants were designated as "Western Methods," "Eastern Methods" and "Mixed Methods," to indicate whether their systems were developed in the West, whether they operated under programs emanating from Eastern home offices, or were a mixture.

This installment covers production control, with two examples of how it functions. Next month: Production Control and Labor Efficiency. (Labor costs, time study).

Previous installments covered the following ground:

March issue: How 211 Plants in the West Organize Their Operations. (Covers division of functions).

April issue: Methods of 211 Western Plants: Do They Compare with Yours? (Covers organization charts, communications, manuals, review of division of functions).

May issue: Do Your Operations Proceed According to a Plan? (Covers methods, standards and production engineering programs).

Here is the score on the activities covered by the production control program reported at the bottom of the opposite page

Designations "Western," "Eastern" and "Mixed" indicate whether methods and systems were independently developed in the West, or formulated by eastern management or parent company, or are a combination of both. Numbers indicate number of plants.

SCHEDULING: 114 Yes; 25 No... Indispensable if delivery dates are to be met

Southern California

	Yes	No
Western Methods	25	1
Eastern Methods	5	....
Mixed Methods	4	....

Northern California

	Yes	No
Western Methods	20	1
Eastern Methods	4	....

Western Washington

	Yes	No
Western Methods	38	15
Eastern Methods	7	1
Mixed Methods	4	....

Eastern Washington

	Yes	No
Western Methods	2	....
Mixed Methods	1	....

Utah

Yes	No
12	1

Oregon

	Yes	No
Western Methods	14	4
Mixed Methods	....	2

Colorado

	Yes	No
Western Methods	4	....

Idaho

	Yes	No
Western Methods	4	....

ROUTING: 116 Yes; 43 No... Pre-planning will eliminate snap judgments

Southern California

	Yes	No
Western Methods	24	3
Eastern Methods	3	2
Mixed Methods	3	....

Northern California

	Yes	No
Western Methods	10	7
Eastern Methods	3	1

Western Washington

	Yes	No
Western Methods	32	18
Eastern Methods	6	2

Eastern Washington

	Yes	No
Western Methods	2	....
Mixed Methods	1	....

Utah

Yes	No
12	1

Oregon

	Yes	No
Western Methods	12	4
Mixed Methods	1	1

Colorado

	Yes	No
Western Methods	3	1

Idaho

	Yes	No
Western Methods	4	....

DISPATCHING: 112 Yes; 37 No... A race can't come off without a starting gun

Southern California

	Yes	No
Western Methods	23	2
Eastern Methods	2	3
Mixed Methods	3	....

Northern California

	Yes	No
Western Methods	11	6
Eastern Methods	3	1

Western Washington

	Yes	No
Western Methods	35	16
Eastern Methods	6	2
Mixed Methods	4	....

Eastern Washington

	Yes	No
Western Methods	2	....
Mixed Methods	1	....

Utah

Yes	No
12	1

Oregon

	Yes	No
Western Methods	12	4
Mixed Methods	....	2

Colorado

	Yes	No
Western Methods	4	....

Idaho

	Yes	No
Western Methods	4	....

EXPEDITING: 143 Yes; 36 No... Someone has round up the strays

Southern California

	Yes	No
Western Methods	24	1
Eastern Methods	4	1
Mixed Methods	4	....

Northern California

	Yes	No
Western Methods	18	3
Eastern Methods	4	....

Western Washington

	Yes	No
Western Methods	41	13
Eastern Methods	7	1
Mixed Methods	4	....

Eastern Washington

	Yes	No
Western Methods	2	....
Mixed Methods	1	....

Utah

Yes	No
12	1

Oregon

	Yes	No
Western Methods	13	5
Mixed Methods	1	1

Colorado

	Yes	No
Western Methods	4	....

Idaho

	Yes	No
Western Methods	4	....

Schlage Lock Company production control department scene, with John O'Boyle, who has charge of this department at the desk against the window. Conferring with him is Western Industry's consulting technical editor, Lloyd Thorpe, an expert on production.

Inventory Adjusts to Demand When Schlage Installs Production Control

A GOOD example of a manufacturing plant which has increased its efficiency greatly through producton control is Schlage Lock Co., San Francisco. All the operations of the production control department are based on pre-estimated sales or an agreed-on quantity of output worked out between the sales and production departments and top management.

The master production control chart is actually a bill of materials required for each lock. The orders for materials naturally follow the sales pattern, because one type of lock may be more in demand than another.

After this information is ready, the schedules for manufacturing and finishing are worked out, and the order clerks re-order parts on the basis of these schedules rather than on a fixed minimum, the orders rising and falling in tune with production requirements.

Daily Production Meetings

To make the schedules still more effective, daily production meetings are held with the foremen of the production departments which enable both Production and Production Control to concentrate on the most essential items. The meetings also serve to inform Production Control what is holding up any delayed items. Weekly reports are also prepared showing the status of each part of every lock in production at that time.

As a result of this system, inventories can safely be expanded so as to provide the things most frequently needed, and at the same time to avoid loading up with slower-moving items. If sales fall off and production is cut back, inventory can be promptly and proportionately reduced.

When Schlage installed production control, it was found that perhaps the most important job to be done was to make the staff schedule-conscious. After their proper application to production was determined, their value was realized. Experience also has taught that scheduling should not only cover the main body of production, but should likewise extend to small items that are infrequently used.

Routing includes keeping records of the movement of parts, to show where they have gone, how many, and where they may be found. Dispatching is a closely related function, and the parts are routed to the dispatching clerk from the stock room or from preceding operations.

As a result of installing production control, expediting has been reduced to the point where it is confined mostly to advance notices of dates that must be met or of actual stock-outs in the store room which have arisen because of technical difficulties.

Stores Fully Controlled

One of the greatest victories for production control at Schlage was in the store room. Previously store room records had been kept in the control office and accepted as the actual stock balance, with the result that the records frequently failed to correspond with physical inventory. Parts and supplies that supposedly were ample were found to be dangerously short or even missing altogether, as the result of depletions of one kind or another that failed to be chalked up on the records.

The answer was to make the store room accept responsibility. As a result people no longer walked in and took things out of the bins or off the shelves without signing for them, nor did the clerks permit anyone else but themselves to count the withdrawals. Also small items were counted out into uniform lots, put into containers, and orders of less than whole lots filled from an unbroken container. This made it both easy and accurate to keep track of the stock.

No Inventory Shut-Down

Production is not stopped to take physical inventory of the store room. Instead, each item is inventoried once a year and the work spread out to avoid a peak. For inventorying parts in process, the plant is shut down over a week-end, and at this time all ins and outs from the store room are stopped.

One of the specific advantages derived from production control was the speeding up of manufacturing schedules to the point where it became possible to produce locks for stock, instead of merely filling orders.

Production control at Schlage Lock has proved to be the means by which production is geared to customer demand. Close coordination with the sales department enables Production Control to transmit to Production the variations in demand as they arise.

Friden System Synchronizes All Angles in Manufacturing Schedule

IN THE production control department a manufacturing program, conceived by the sales department and approved by the management, is received and put into effect. The number of calculating machines to be manufactured is based on a forecast of the sales requirements and the program released must satisfy the sales demands far enough in the future to cover a production planning cycle. As time is an all-important factor to synchronized manufacturing, a program already inaugurated cannot be changed without many complexities and possible schedule failure.

The main functions of the production control department are planning, ordering, scheduling, routing, inventory control, inter-plant transportation and dispatching.

Master Sheets Govern

Planning requires an accurate basic bill of materials, complete usage knowledge, and detailed part operation information, such as routing, tools to be used, machine for each operation, and time to be allotted for the completion of a given number of parts. This information is derived from Ditto mastersheets which are originated by the Production and Methods Engineering Departments. These master sheets are released to production control for each unit part, sub assembly, or major assembly, and the information therein contains all the current data which is relative to the making of each part or assembly.

The automatic card processing machines, located in the tabulating department, are utilized for a condensation of the information contained in the Ditto operation masters. Cards are maintained for each factory production operation performed, and for each part and its intermediate usage.

These cards also contain other information relative to production, such as standard time rates, economic lot quantities, operation numbers, department numbers, type of part, delivery location, material required, labor classification, etc. The processing extensions of these cards provide printed information so that the important time and quality factors can be related to a given schedule.

Aids Cost Accounting

These same card files are also used for automatic extensions required for providing master reference parts and materials usage books, final assembly group requisitions, machine load reports and standard cost information required by the Cost Accounting Department. It is apparent that the production control department is dependent upon the cooperation of certain other departments before it can even begin its own tasks.

The ordering of the thousands of parts used must be in direct relation to finished product program demands, so that each detailed part and assembly has the proper quantity available at the proper time.

The production operation Ditto masters are used to reproduce on printed forms the necessary shop routing cards, order progress sheets, and operation cards. The parts are then scheduled and released for production according to requirements and manufacturing time.

Approximately 98 per cent of the parts used in the Friden fully automatic calculator are produced within its own plant, with the remaining 2 per cent ordered through the medium of requisitions released to the purchasing department. In conjunction with the release of orders to the shop, the progress of the orders is known through a duplicate copy of each order, which is kept current in the production control office.

The quantity of all component parts, raw materials issued, and operations completed is posted to these copies so that the exact status of each order is always known. Completed requisitions and "shop move tickets" furnish this source of information. Shop move tickets show the completion of a specific operation and furnish instructions to the inter-plant truckers as to where the parts should be moved for subsequent operations.

Final assembly schedules and major parts and assembly schedules are issued each month. The major parts and assembly schedules are in direct accord to the final assembly requirements and these parts are manufactured and delivered directly to the point of use on the assembly line.

Due to their size, cost or manufacturing span, these parts (for example, cover parts) are in almost continual process, but never accumulated for inventory. Most other parts, being small in size and of a lesser cost value, are ordered intermittently in larger volume. These smaller parts are stored temporarily in the finished parts storeroom for subsequent requirements.

Thorough Dispatching

Although it is a responsibility of the production engineering department to originate all routings, it is the responsibility of production control to see that all routing follows the exact processes required. Shop dispatchers are located in several central locations to

Elmer Hansen (left), Friden's production control manager, and D. S. Gross, factory manager, hold frequent meetings to insure that management instructions are relayed to departments of the Friden Calculating Machine Co. factory at San Leandro, California

see that the routing does not deviate, to assist with order control, to demand schedule adherence, to count parts and release move tickets, and to record the employees' daily operation time.

A central dispatcher operates from the production control office where he has access to the entire operation. An inter-communication system affords him direct contact with each dispatcher so that instructions and follow-up can be immediate on any parts which are urgent to schedule realization.

Inventory knowledge is a vital control and is of particular importance when referring to finished parts stores and raw material stores. Perpetual inventory Kardex records are situated in the production control office and these records must be accurate and current. There are other controls and reports in evidence, such as the handling of rejected parts, the parts salvage inventory, the reworking of rejects, engineering change procedures, and the ordering and expediting of all purchased parts and raw materials, etc.

It is also interesting to note that the production control department furnishes the accounting department a complete inventory picture monthly.

Who specifically authorizes the start of work on a new activity, such as a new production run, or a new product? Here are some of the survey replies

Designations "Western," "Eastern" and "Mixed" indicate whether methods and systems were independently developed in the West, or formulated by eastern management or parent company, or are a combination of both. Numbers indicate number of plants.

Southern California

Western Methods
- Executive Management 1
- Superintendent 3
- Head of Prod. Control 2
- Chief Engineer 1
- Production Manager 1
- Division Manager 1
- Sales Engineer 1
- Office 1
- Salesmen 1

Eastern Methods
- Production Control 2
- Production Manager 2
- Engineer 1
- Home Office 1
- Division Manager 1

Mixed Methods
- General Manager 2
- Development Department 1
- Superintendent and Mgr. 1

Northern California

Western Methods
- Superintendent 13
- Management 5
- Orders 1
- Chief Engineer 1
- Production Control 1
- Branch Manager 1

Eastern Methods
- Research, Development and Production 1
- Plant Superintendent 1
- Manager Prod. Control 1
- Manager of Division 1

Oregon

Western Methods
- Plant Superintendent 7
- Executive Management 8
- Production Control 3
- General Manager and Production Manager 2
- Committee 1
- Supervisor 1
- Assistant Manager 1
- Shipping Department 1

Mixed Methods
- Production 1
- Management 1

Western Washington

Western Methods
- Executive Management 38
- Superintendent 11
- Production Engineer 4
- Sales and Production 2
- Production 2
- Production and Prod. Control 1
- Department Heads 1
- Production Mgr. and President 1
- Engineer Department 1
- Executives and Sales Dept. 1

Eastern Methods
- Management 2
- Engineer 1

Mixed Methods
- Plant Superintendent 1
- Plant Manager 1
- Salesman 1
- Sales and Cost 1
- Production Control man 1
- President and Superintendent 1
- Mgr. and Superintendent 1

Eastern Washington

Western Methods
- Manager 3

Mixed Methods
- Shop Superintendent 1
- Management 1

Idaho

Western Methods
- General Manager 4

Utah

- Executive Management 8
- Supt. of Plant Operations 1
- Production ComptrollerN 1

Colorado

Western Methods
- Production Manager 2
- Budget and Sales Depts 1
- Production Control 1
- Production Planning 1

In what way can production control programs be improved? Here is a variety of answers from Western plants. Some of these suggestions may help you

Southern California

Western Methods
- Closer understanding of production and material control and sales analysis.
- By increasing inventory of work in progress between operations.
- Too many programs get involved in paper.
- Solving problem of delay due to Govt. inspection.
- Greater inventory control.

Eastern Methods
- Already highly developed.

Mixed Methods
- Biggest problem is multiplicity of parts.
- Finer breakdowns.

Northern California

Western Methods
- Less elaborate 1
- Improve the men 1
- Simple and attractive in 90% cases. Other 10% costs too much 1

Oregon

Western Methods
- Use of wage incentive.
- Follow-up by foreman.
- Make a department or person responsible.
- Purchase of new equipment.
- Uniform consumer demand.
- Education of workers and information on incoming orders.
- Improve speed of machines.

Western Washington

Western Methods
- Larger production 1
- Definite program under way to improve 1
- Prod. expediter to follow through each order 1
- Engr. firm governs procedure. Possible change in wage system 1
- Production problem expert 1
- Doesn't need revision unless plant operation at or near capacity 1
- Simplicity and human relations 1
- Education in modern techniques in chemistry 1
- Better equipment and more floor space 1
- I. E. and time studies 1
- Best available supervision 1
- Better conditions in entire plant 1
- Further simplification 1
- By installing one 1
- Application of standard methods 1
- Not interested 2
- Better schedules and methods 1

Eastern Methods
- Improve methods 1
- Satisfactory at present 1

Mixed Methods
- Including past performance records and previous errors in judgment 1

Eastern Washington

Western Methods
- Variation in the line precludes better control 1

Mixed Methods
- Specialist reporting to top management 1

Idaho

Western Methods
- Development of new products 1

Utah

- Closer observation 1
- Full-time observation 1
- More accurate production data 1
- Enforcing control procedures 1
- More supervision 1
- Keep program flexible and adjust to new ideas and findings 1

Colorado

Western Methods
- Should be used more 1
- Trial and error 1

The above quotation is from a letter by the Struthers Wells Corporation, Warren, Pa., accompanying the picture shown above. The picture shows two boiler feedwater heaters, intermediate and low-pressure, made by Struthers Wells for the generating station of a large public utility. These two tube bundles contain Revere deoxidized copper tubes, made to ASTM Specification B-111. One uses ¾" O.D. x #18BWG tube, while the other has tube ⅞" O.D. x #18 BWG. It will be noted that some of these tubes are bent to a small radius; superior bending quality is one of the features of Revere Copper Tube supplied for such purposes . . . In addition to copper tube, Revere offers for condenser and heat-exchanger service tubes in all the customary copper alloys, such as Admiralty Metal, Muntz Metal, the brasses and bronzes, and the cupro-nickels . . . For true economy it is important to select the correct size and alloy to meet actual conditions of use. Revere will gladly collaborate with you in such selection, whether for new equipment, or for re-tubing.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

• • •

Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.

Sales Offices in Principal Cities, Distributors Everywhere.

Pacific Coast District Sales Offices in San Francisco, Seattle, Los Angeles.

Minerals In Hard Water Increase Cost Of Operating. Save With Soft Water

Here's a place where you can save hundreds of dollars while you do a better job

By JOHN F. CRANE
Allied Industries
San Diego, California

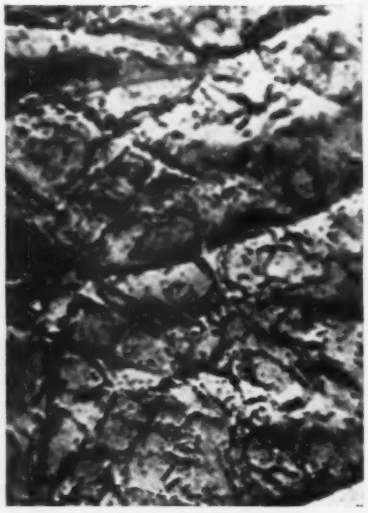
MANY Western industries can boost their profits as well as the quality of their work by using soft water instead of hard water.

Hard water eats away at plant profits but it is still not recognized in many industries. Hard water, for instance, requires higher chemical concentrations to do the equivalent job of soft water. Various chemical companies recommend certain concentrations for their products in hard water, but do not inform the consumer of the savings of hundreds of dollars which would result from use of zero soft water.

Before water reaches your plant, it may have traveled 1,000 miles over the Colorado limestone beds. It may have been pumped from wells. Or it may have come through the municipal water mains, after having received a series of treatments to insure its purity with respect to bacteria.

In any event, it has absorbed and dissolved minerals, inorganic salts and silt in its travels, which are still present when it reaches you. It is these minerals—calcium and magnesium salts—which give water the quality of "hardness." It is the presence of these minerals that runs up your production costs. Elimination of these minerals is necessary to produce soft water and thereby reduce your operating expense.

As long as calcium salts and magnesium salts are free to combine with oil and other foreign matter to form insoluble compounds, your chemical solutions such as soaps, detergents, acids, alkalis, and others will be used up to a goodly extent (by combining chemically with these salts) before they even start to be used in their intended function.



This macrophoto shows a section of skin washed in hard water. Notice the cuts and scale formed on the surface, by mineral deposits in the water. Then compare:

This section of skin, washed with soft water. Clean, open pores, free of dirt, debris and scale. Graphic illustration of hard water action, on hands or in plant.

Proper research and inquiry on the part of plant laboratories would emphasize the importance of soft water, and reveal the need for partial or complete installations of equipment to provide it.

Water softener installations usually pay for themselves in a short period of time. Maintenance costs, production costs, operating costs, and processing costs will then be found to be much more acceptable to your business.

Efficiency of a water softening process is illustrated by the following analysis of water before and after being demineralized (Ref. 1):

Water Hardness	*Before*	*After*
Total solids	131	9
Calcium carbonate	91	0
Sulfates	18	1
Chlorides	11	0
Silica	6	6

A more complete list of these water impurities would include calcium sulfate, magnesium sulfate, calcium bicarbonate, magnesium bicarbonate, magnesium carbonate, sodium chloride, aluminum sulfate, and silicon dioxide.

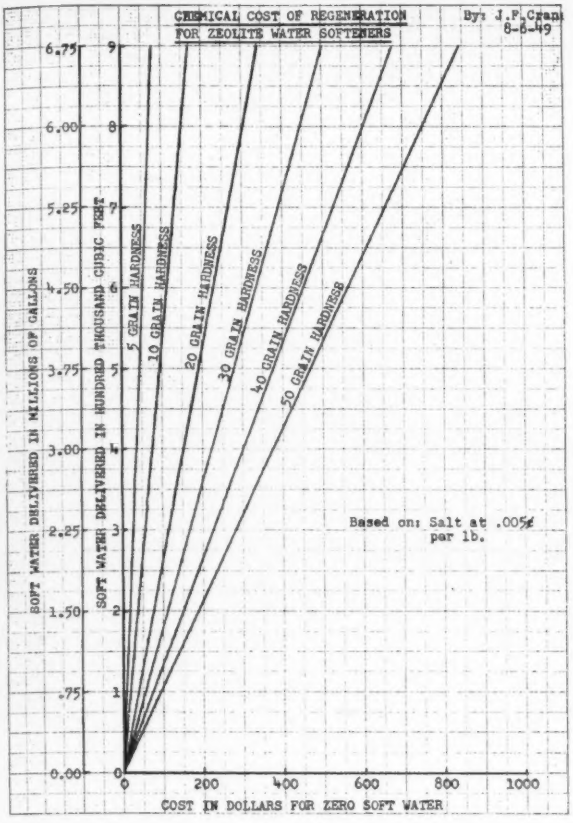
Actually, these salts do not exist in water as such, but rather as "cations" and "anions." In chemical terms, these would be written as:

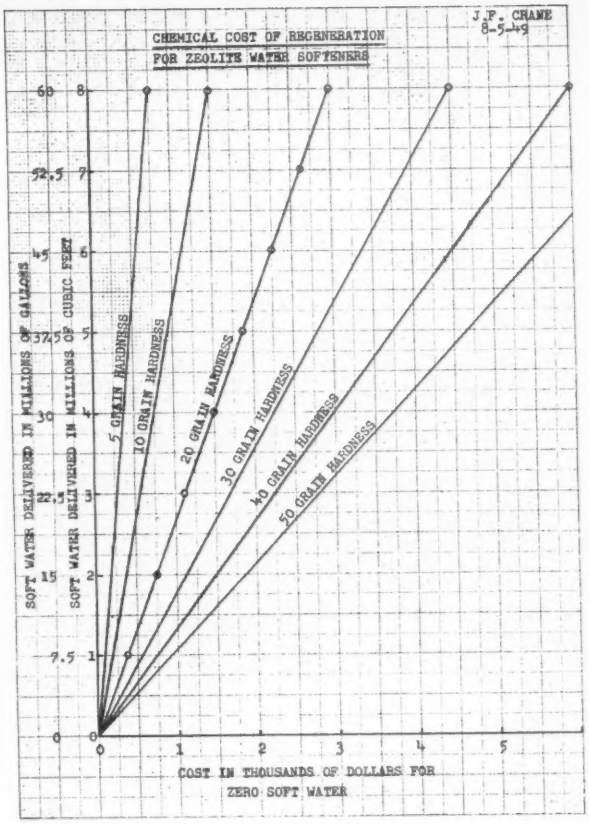
Cations: Ca^{++} Mg^{++} Na^{++} Al^{++}
Anions: So_4^{--} CO_3^{--} HCO_3^{-} Cl^{-}

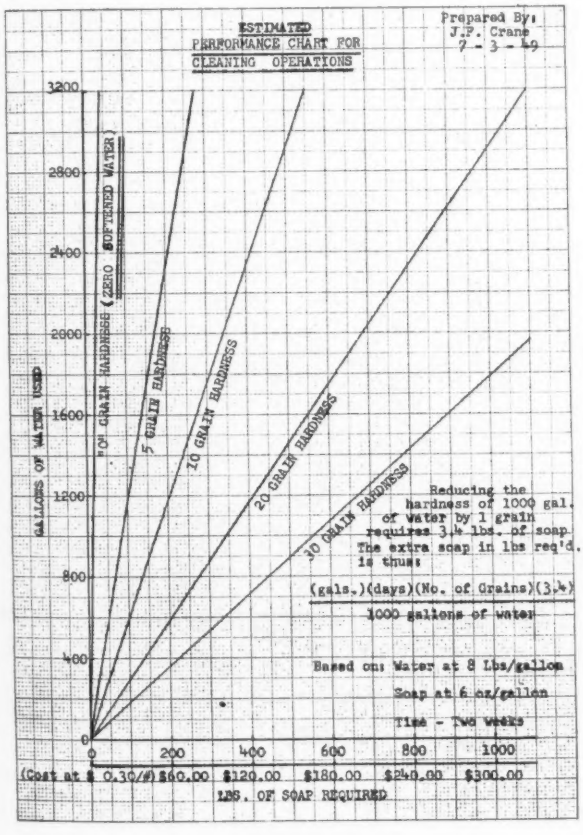
The objectionable Anion CL– is entirely removed with a Demineralizer.

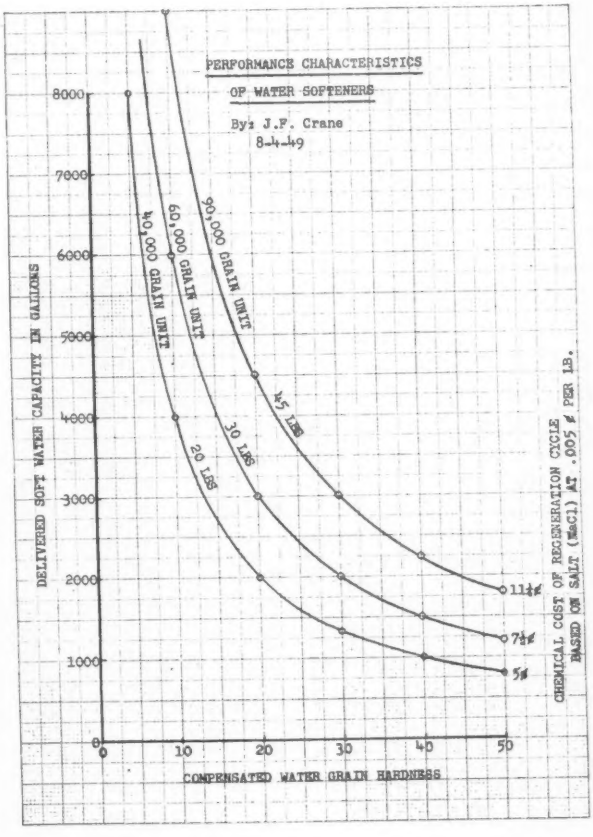
Continued on page 50

JOHN F. CRANE

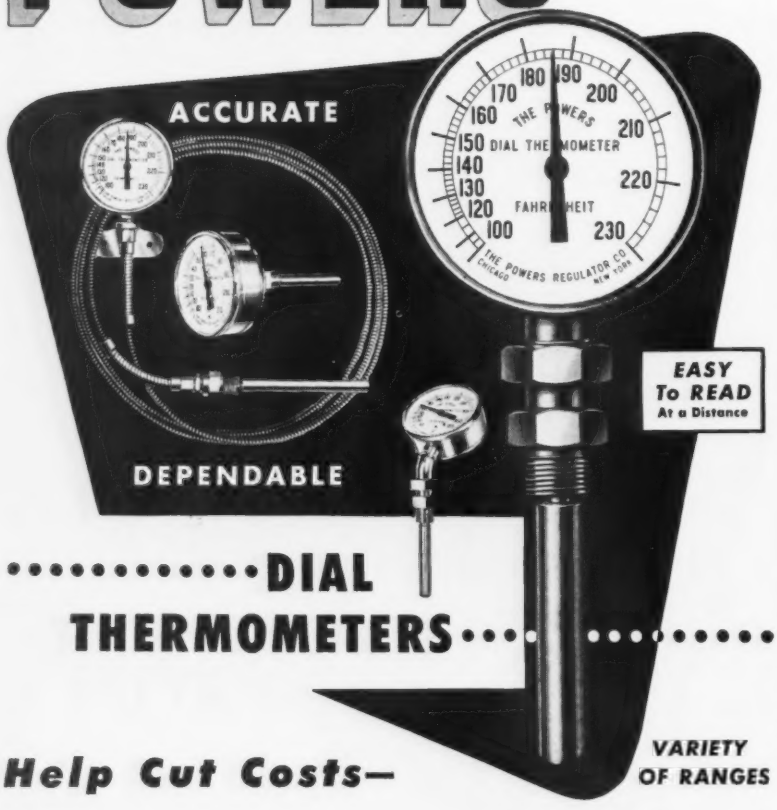

CHEMICAL COST OF REGENERATION
FOR ZEOLITE WATER SOFTENERS
By: J.F. Crane
8-6-49
SOFT WATER DELIVERED IN MILLIONS OF GALLONS
SOFT WATER DELIVERED IN HUNDRED THOUSAND CUBIC FEET
5 GRAIN HARDNESS
10 GRAIN HARDNESS
20 GRAIN HARDNESS
30 GRAIN HARDNESS
40 GRAIN HARDNESS
50 GRAIN HARDNESS
Based on: Salt at .005¢ per lb.
COST IN DOLLARS FOR ZERO SOFT WATER


CHEMICAL COST OF REGENERATION
FOR ZEOLITE WATER SOFTENERS
J.F. CRANE
8-5-49
SOFT WATER DELIVERED IN MILLIONS OF GALLONS
SOFT WATER DELIVERED IN MILLIONS OF CUBIC FEET
5 GRAIN HARDNESS
10 GRAIN HARDNESS
20 GRAIN HARDNESS
30 GRAIN HARDNESS
40 GRAIN HARDNESS
50 GRAIN HARDNESS
COST IN THOUSANDS OF DOLLARS FOR ZERO SOFT WATER


ESTIMATED
PERFORMANCE CHART FOR
CLEANING OPERATIONS
Prepared By:
J.P. Crane
7-3-49
GALLONS OF WATER USED
NO GRAIN HARDNESS (ZERO SOFTENED WATER)
5 GRAIN HARDNESS
10 GRAIN HARDNESS
20 GRAIN HARDNESS
30 GRAIN HARDNESS
Reducing the hardness of 1000 gal. of water by 1 grain requires 3.4 lbs. of soap. The extra soap in lbs req'd. is thus:
(gals.)(days)(No. of Grains)(3.4)
1000 gallons of water
Based on: Water at 8 Lbs/gallon
Soap at 6 oz/gallon
Time - Two weeks
(Cost at $ 0.30/#) $60.00 $120.00 $180.00 $240.00 $300.00
LBS. OF SOAP REQUIRED


PERFORMANCE CHARACTERISTICS
OF WATER SOFTENERS
By: J.F. Crane
8-4-49
DELIVERED SOFT WATER CAPACITY IN GALLONS
40,000 GRAIN UNIT
60,000 GRAIN UNIT
90,000 GRAIN UNIT
45 LBS
30 LBS
20 LBS
11½¢
7½¢
5¢
CHEMICAL COST OF REGENERATION CYCLE BASED ON SALT (NaCl) AT .005 ¢ PER LB.
COMPENSATED WATER GRAIN HARDNESS

POWERS



••••••••••••DIAL THERMOMETERS••••••••••

VARIETY OF RANGES

Help Cut Costs—

For more accurate temperature readings and improved efficiency use POWERS Dial Thermometers. They're vapor pressure actuated. Have 4" dials with either rigid stem for use in pipe lines and tanks or flexible tubing type for conveniently showing the temperature at a remote point. For further information and prices phone or write our nearest office. Offices in 50 cities. Over 55 years of automatic temperature control.

(DT2)

WRITE FOR BULLETIN 355

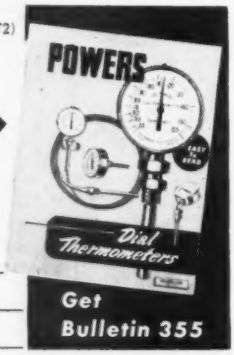
THE POWERS REGULATOR CO.
1805 W. 8th St., Los Angeles 5, California

Gentlemen: Please send me Bulletin 355.

Name_____ Title_____

Firm Name_____

Address_____



Continued from page 48

This type of water softener differs from the ordinary zeolite type of softener in that it employs alternate cation and anion exchangers such as sulfuric acid and caustic compounds to strip and remove the dissolved solids mentioned. Previously, the only known way of getting rid of them was distillation: heating water in a suitable receptacle until it vaporized (most of which fortunately, do not vaporize as readily as water) in the receptacle. Then the water vapors (steam) had to be collected and cooled from the gaseous state back into the liquid water.

The Way It's Done

In other words, instead of removing the solids from the water, the water was removed from the solids. Unfortunately clorine—Cl–passes over with the steam and even in triple distilled water is present enough to cause bacterial cultures to be adversely affected in their growth and life. Consequently hard water is necessary to provide ample food and nourishment to increase bacteria or demineralized water may be used since the Cl– anion will be entirely ionicly exchanged.

Hard water softeners employ the base exchange of sodium aluminum silicate, known as "Zeolite," to exchange sodium for calcium and magnesium in the raw water. Zeolite is a granular substance used as a filter bed through which the raw water passes.

Continuous Cycle

Before sodium becomes exhausted, it is necessary to regenerate the zeolite (replace the lost sodium) by washing with a strong solution of sodium chloride for half an hour or more. Chlorides resulting from these reactions must be washed out of the zeolite. It is usual to use two filter beds alternately, one of which treats the raw (hard) water while the other is being regenerated.

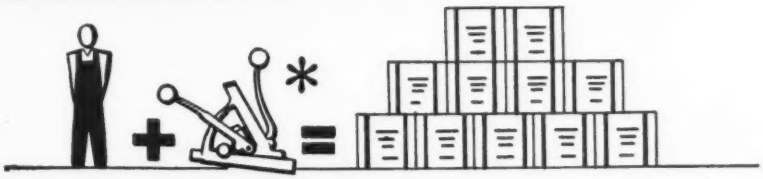
The symbol Ze stands for the zeolite radical: $2\ SiO_2 \cdot Al_2O_3 \cdot Na_2O$, which may be written $Na_2\ Ze$.

Hard water in contact with zeolite gives: $Na_2Ze + Ca(HCO_3)_2 = CaZe + 2\ NaHCO_3$.

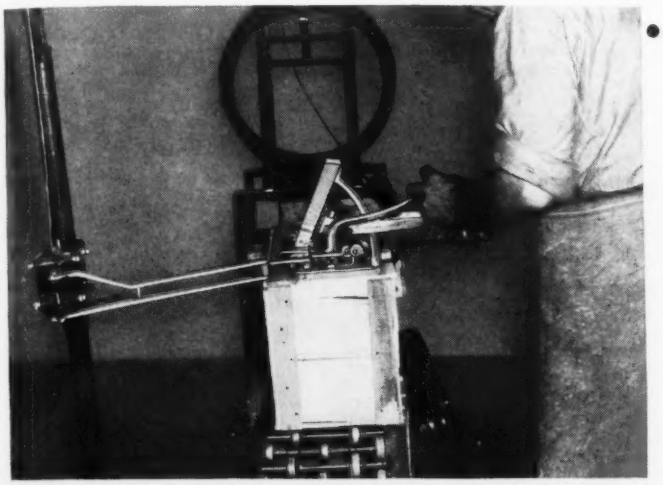
Continued on page 52

Wouldn't you like to be a duck? All it has to be is just water to suit us. Who is this Mr. Zeolite, anyway? Is he married?

300 MORE CASES PACKED PER DAY



...AT 1/3 LOWER COST



One manufacturer found that one man *plus* the Stanley *ACE STRAPPING TOOL not only upped the packing rate from 250 packages strapped a day to 550—but also freed two other employees formerly needed in shipping room for more productive work.

You can't argue with facts and figures like these from manufacturers of hundreds of different products, *proving* the Stanley Steel Strapping System slashes shipping expense to the bone. With rising costs plus growing resistance to higher prices, Stanley Steel Strapping is more than ever a factor *you* can't afford to ignore.

Stanley Steel Strapping is quick and easy to apply—gives greater protection to goods in transit—makes important savings in man-hours and materials. Get the details on the savings it can make in your shipping room. Write for facts, or have a Stanley representative call now! The Stanley Works, Steel Strapping Division, 234 Lake St., New Britain, Conn.

Seattle Office: 618 2nd Avenue • **San Francisco Office:** 527 Folsom Street

Los Angeles Office: 108 W. 6th Street

STEEL STRAPPING AND CAR BANDING SYSTEMS

STANLEY

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

"Drive thy business — let not that drive thee."

—Ben Franklin's Almanac, 1757

These days thee must work a month for the taxgatherer before thee begins to work for thyself. Keep a firm hand on the wheel of savings to bolster thy "nett after taxes."

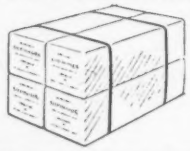
—Acme Steel's Notebook, 1950

How long, Mr. Comptroller, since you broke "Miscellaneous" down into its multitude of sins? Do it—and you may uncover profit leaks that are subtracting real money from the profit column.

Most companies find plenty of such leaks to plug in packaging, shipping and materials handling operations. Acme sales engineers are specialists in finding these leaks—then plugging them. In 9 out of 10 cases, we can point the way to greater efficiency and good, solid thrift with Acme Methods and Acme flat steel strapping, Acme stitching machines and wire, and other Acme Steel products.

We have already proved this for the more than 50,000 customers we now serve. Two specific cases are reported here. It takes just a minute to read them and call us in.

Acme sales engineers, technical facilities and nationwide service are ready to start helping you. Reach for the telephone and call the Acme Steel service office nearest you. (There are 46 of these offices in the principal cities of the U. S. and Canada.) Or send the coupon for details on your special field.



Old Way: $4.01 express charges
Acme Steel Way: $2.26 " "

Cash Saving $1.75 per bundle

By bundling 4 cartons with Acme Steelstrap, instead of shipping separately, Exola Products, Inc., of Los Angeles, cut shipping costs 43%.

Materials cost cut 87%
Time saved 30%

Yes, and production was increased, too, and stronger, better-quality packaging achieved when B&T Metal Co., Columbus, Ohio, put Acme Silverstitchers to work on their packaging problem.

ACME STEEL

You're invited to watch us roll out the strip steel when you're in or near Chicago. Our rolling mills at Riverdale, Illinois, covering more than 1,700,000 square feet, house one of the largest, fastest strip steel operations in the world.

ACME STEEL CO. CHICAGO

ATTACH THIS COUPON TO YOUR BUSINESS LETTERHEAD

ACME STEEL COMPANY, Dept. WI-60, 2838 Archer Avenue, Chicago 8, Illinois

We manufacture _____. Please send me booklets on Acme Methods checked.

- ☐ Please have sales engineer call.
- ☐ **Packaging, Shipping, Materials Handling**—"Savings in Shipping" tells how to save money and safeguard customer good will with Acme Steelstrap.
- ☐ **Shipping (Carload and L.C.L.)**—"Acme Unit-Load"—The story of reduced damage claims and better handling for shippers.
- ☐ **Bag and Box Assembly**—"Profit by Stitching" demonstrates cost-cutting Acme Silverstitchers and Acme-Champion Stitchers.
- ☐ **Product Assembly**—"Acme-Morrison Metal Stitchers"—for savings in fastening metal-to-metal or metal-to-other materials.
- ☐ **Book Assembly**—"Acme-Morrison Book Stitchers" for savings in the graphic arts field.

NAME _____ POSITION _____

COMPANY _____

STREET _____

CITY _____ ZONE _____ STATE _____

ACME STEEL CO. CHICAGO

Continued from page 50

For regeneration, the reaction is: $Ca\ Ze + 2\ Na\ Cl = Na_2\ Ze + Ca\ Cl_2$.

Industrial applications discussed include:

A. Plant Maintenance
1. Hand soap
2. Window cleaners
3. Lavatories
4. Plumbing

B. Plant Equipment
1. Air Compressors
2. Steam generators and boilers
3. Water heaters
4. Prime movers
   a. Diesel engines
   b. Liquid cooled engines

C. Plant Processing
1. Plating solutions
2. Anodizing solutions
3. Sodium carbonate quench tanks
4. Alkaline cleaner tanks
5. Water rinse tanks
6. Electrolytic cleaner tanks
7. Caustic tanks
8. Acid tanks
9. Water soluble cutting oils

D. Miscellaneous
1. Dyeing
2. Photography
3. Paper mills
4. Bakeries
5. Dairies and milk plants
6. Beauty shops
7. Cafeterias

A. Plant Maintenance

1. *Hand soap:* Hand soap savings will be reduced by over 50 per cent. The usual monthly bill for liquid and solid type hand soap will decrease because the users will not want to try to rinse off excessive suds indefinitely. Hands will be washed clean in half the time compared with using hard water, thus reducing water consumption. The usual hazard from the use of hard water (skin diseases from lime in the water) is eliminated with zero soft water.

2. *Window cleaners:* Special window cleaners are not necessary with zero soft water. The usual limestone deposit left on glass will be removed and carried away by soft water, thus allowing the glass to dry clear.

3. *Lavatories:* The usual hard water "rings" found on wash basins and lavatories will not form with zero soft water. Labor time and effort required to clean and maintain sanitary conditions will therefore be cut in half.

4. *Plumbing:* Soft water will protect porcelain fixtures from deterioration by stains and corrosive action from lime deposits. Scale and soap curds will not cause the water flow to be restricted or plugged since zero soft water has an affinity for the lime deposits and will clean them out in a short time. This feaure will have

Continued on page 54

When you get a "Big One"

The skillful fisherman doesn't depend on luck for getting the big ones. He has the proper equipment . . . knows how best to use it.

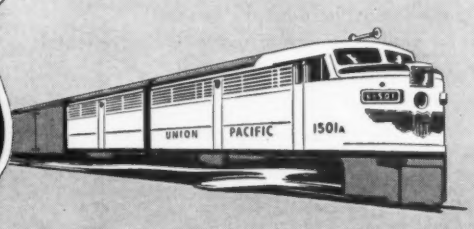
When Union Pacific gets a "big one" . . . a heavy tonnage freight shipment . . . it, too, has the equipment and the knowledge necessary for efficient handling.

For example, there are the "Big Boys" . . . largest, most powerful steam locomotives ever built. Designed to haul unusually heavy loads, they do a terrific job.

In addition, there's a large fleet of diesel-powered locomotives . . . more than 50,000 freight cars of various types.

Whether your shipment consists of heavy materials, fragile merchandise, perishables or what not, the U. P. can handle it efficiently and speedily.

UNION PACIFIC RAILROAD



BE SPECIFIC: *Ship* UNION PACIFIC

new Snap-on* Catalog

OF INDUSTRIAL WRENCHES AND MECHANICS TOOLS

now ready for distribution

*Snap-on is the trademark of Snap-on Tools Corporation

Send for your copy TODAY!

This complete and well-illustrated catalog describes Snap-on's entire line of standard wrench equipment and mechanic-type maintenance tools. The most complete line of its kind! Write today for your copy and discover why Snap-on is servicing businesses everywhere with tools for more efficient production, maintenance, and service.

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- Facilities for production runs of special tools available!
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SNAP-ON TOOLS CORPORATION
8032-F 28TH AVENUE
KENOSHA, WISCONSIN

Continued from page 52

plumbing repairs and gaskets which have to be replaced because of abrasive action of the "hard" water. With dirt and limestone removed from the water by filtering and chemical reaction of the water softener, these savings will create profits by lowering maintenance cost. In many porcelain fixtures there is a trace of the hard water line. Surfaces are dull, and calcium and magnesium soaps seem to have an especial affinity for porcelain. It takes a hard rubbing with an abrasive to get the surface cleaned of its film of soap curds. The sticky characteristics of these curds tends to collect dirt particles and stains of all sorts. There is little doubt that the bacteriology of articles allegedly "washed" in hard water is extensive, since much of the dirt is trapped in the insoluble hard water-soap compounds, a part of which is known as soap curds. (Ref. 3.)

B. Plant Equipment

1. *Air Compressors:* Air compressors using water as a cooling medium generally reach water temperatures in excess of 180° F. When water is heated above this temperature, lime deposits on the walls of the equipment thus impairing its efficiency. A one-eighth inch deposit of lime is said to have an insulating value equal to one inch of steel in heat transfer. Zero soft water will stop this formation and eliminate existing deposits, thus extending the operating life of the compressor between major overhauls. (Ref. 4-8.)

2. *Steam Generators and Boilers:* These units are greatly benefited by the use of zero soft water. The ordinary chemicals required to soften the water and prevent limestone formation in the tubes and plumbing are cut to a bare minimum. After the plumbing system has been thoroughly cleaned out with a few months of soft water operation, boiler compounds in the water may be discontinued if water conditions are favorable. Savings in boiler water compounds is estimated to be in excess of 80 per cent.

3. *Water Heaters:* The normal period for water heater replacement has been stepped up to about two years in this area due to high water pressures and excessive limestone deposits. Scale forms on the bottom inside section of the heater, thus demanding higher temperatures to create a given temperature as set by the automatic temperature controls. With zero soft water these fuel savings and replacement costs alone will justify water softening installations in a short period of time.

Continued on page 56

CLEANS
_as it
PROTECTS
_as it
LUBRICATES

NEW TYDOL *Heavy Duty Motor Oils, for Gasoline, Diesel and Butane Engines,* solve the problems of modern lubrication and extend engine life—eliminate harmful deposits and protect engines from excessive wear. New Tydol HD, Tydol HD S-1, Tydol HD S-2 are made of high quality, high VI paraffinic base oil and new types of "additives." They cover three distinct potency levels to meet every lubrication problem likely to occur in automotive and stationary engines using gasoline, butane, or diesel fuels.

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Tide Water Associated Oil Company

CHECK THESE TYDOL PERFORMANCE FEATURES!

- ✓ Easier starting—better performing even at extreme temperatures.
- ✓ Contains anti-foam agent and assures positive lubrication. Low oil consumption.
- ✓ Freedom from ring sticking—less piston ring and cylinder wear.
- ✓ Prevents sludge and varnish deposits and clogging of oil ducts and passages.
- ✓ Insures free acting valve stems. Provides cleaner filter elements.
- ✓ Non-corrosive to alloy bearings and other engine parts.
- ✓ *Cleans* as it *protects* as it *lubricates.*

TYDOL HD

Especially recommended for high speed diesel, gasoline, butane fueled engines in automobiles, buses, trucks, tractors, stationary units under normal Heavy Duty conditions. SAE grades 10, 20, 30, 40, 50.

TYDOL HD S-1

Has higher detergency level than Tydol HD. For operation under cold stop and start conditions and under unusually severe continued overloaded conditions in all types of engines. SAE grades 20, 30, 40.

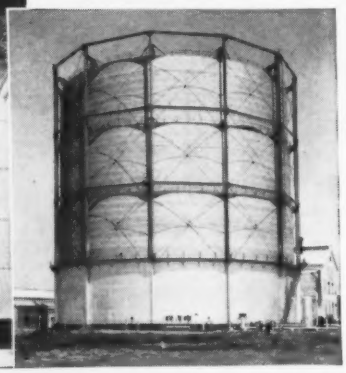
TYDOL HD S-2

Has highest detergency level of the Tydol Heavy Duty series. For high performance and supercharged diesel engines using all kinds of diesel fuels under the most extreme conditions. Available in SAE grade 30.

Call your Associated Representative for expert help on any lubrication problem.

TIDE WATER ASSOCIATED OIL COMPANY

Don't Let Rust and Corrosion Eat Away YOUR PROFITS!



Dum Dum for Metal being applied to the Gas Holder of the Pacific Gas and Electric Company.

The same Gas Holder completely finished with Dum Dum for Metal and protected for many years to come.

Dum Dum for metal gives long-lasting protection to METAL SURFACES

Dum Dum for Metal now offers the same long-term protection to metal surfaces that its famed companion product, Dum Dum Masonoc, has been giving for years to all types of masonry structures. More than a paint, Dum Dum for Metal is thick, tough, elastic . . . designed specifically to protect metal surfaces against the hazards of weather-wear, industrial fumes and gases. Stops those deadly enemies of metal structures . . . rust and corrosion.

When you cover your vital metal structures with this attractive aluminum colored coating, you give added lustre to your plant, but best of all you cut maintenance costs . . . stop profit leaks. Write today for your copy of this important booklet describing Dum Dum for Metal.

MAIL COUPON TODAY

ARCO CO. OF CALIF., LTD.
745 E. 59TH ST., LOS ANGELES 1, CALIF.

☐ Please send booklet describing Stack Dum Dum and Dum Dum Masonoc.
☐ Please send booklet describing advantages of Dum Dem for Metal.
☐ Please have sales representative call.

NAME
COMPANY
ADDRESS
CITY ZONE STATE

SPECIFY ARCO

THE ARCO COMPANY
CLEVELAND • LOS ANGELES

Continued from page 54

4. *Prime Movers*—(a) Diesel engines: Coolants used as a cold application for heat transfer in radiators and water jackets in the cylinder walls have been found to require soft water for continuous operation. Hard water has deposited scale internally and has been the cause of much mechanical damage. Excessive heat developed in some of the large engines has resulted in heads blown up and piston seizure. (b) Liquid-cooled Engines: Soft water used in ordinary reciprocating engines have the same beneficial effect. Soft water prevents scale formation and is very desirable for use in radiators, heat exchangers, and engine cooling systems. If soft water is used originally, lime scale will never be formed. Caution must be exercised in the addition of soft water to those systems that are heavily encrusted with scale as the softened water will remove large pieces of scale from the walls of the cooling system, which may work their way to a portion of the cooling system where there is a reduction in pipe size, thereby obstructing the flow. Frequent flushing after changing to softened water will remove this scale from the radiator. Proper heat transmission in auto cooling systems, as it is in water heaters, and as scale prevents proper heat transmission, its elimination is extremely desirable. A scale causes difficulty in proper cooling due to both obstruction of lines and insulation of surfaces. Clean metallic surfaces will transmit heat more readily and should be kept clean. It is further desirable that a corrosion inhibitor, such as sodium hexametaphosphate, be added to radiators which are free from scale or not free from scale. The cooling system will also operate at peak efficiency with resulting savings being in longer periods between major overhauls. These engines may be operating as stationary units, automobiles, trucks, portable cranes and other powered devices around the plant.

Continued next month

Another Smog Remedy

Another possible remedy for smog is a new inexpensive paper-like filter material design developed for the Atomic Energy Commission by Arthur D. Little, Inc., Cambridge, Massachusetts, research and engineering organization. The new material contains treated paper-making fibers in combination with very finely divided mineral asbestos fibers. It is made in soft, flexible sheets which can be pleated and formed into shapes to fit filtering units of large capacity.

GENERAL WAGE CHANGES IN PACIFIC-ROCKY MOUNTAIN REGION

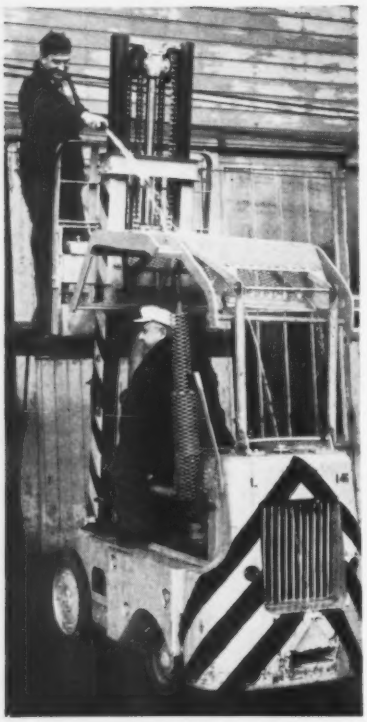
NOTE: This tabulation only reports changes. Information on the large number of contracts renewed without change is unavailable. Therefore the tabulation should not be construed as an indication of the overall trend.

Compiled from various sources by Bureau of Labor Statistics, Wage Analysis Branch

(Where initials of unions are given below: A=A F of L; C=CIO; I=Independent)

	Location	Date	Amount of Increase	Name of Union & No. Employees	Related Information
Chemicals and Allied Products					
American Potash & Chemical Corp.	Trona, Calif.	2/50	None	MMSW—C	
Stauffer Chemical Co.	San Francisco, El Cerrito, Calif.	9/ 1/49	7½c	MMSW—C	Add. 5c eff. 9/1/50; 1¼c in reclass. adjust.; 4 days sick lv., add. day eff. 9/50; revised hol. & vac. plans; co.-pd. health & welfare plan.
Hercules Powder Co.	Hercules, Calif.		5c	OWIU—C—250	Improved pension plan provides $100 mo. min. incl. Soc. Sec. benefits after 25 yrs. service & establishment of pension rights after 15 yrs. serv.; elimination of sick leave waiting per.
Food and Kindred Products					
Hunt Foods, Inc.	Los Angeles, Calif.	9/ 1/49	*5c7½c	TCWH—A	*Production, maint. and warehouse empls.; revised incentive plan—piece workers.
Milk Products Mfrs. Assn. of Calif. (27 Cos.)	Eureka, San Rafael, Santa Maria, Fresno, Modesto, Stockton, Sacramento, Marysville and Salinas, Calif.		None	TCWH—A—3,000	Co.-pd. welfare program provides $2,000 life ins. & Blue Cross hosp. and surgical benefits.
Western Growers-Shippers Assn. (packing shed empls.)	San Joaquin, Imperial and Yuma Valleys; Salinas and Sacramento areas, Calif.		Av. 7½c	FTA—C—4,000	
Independent meat packers (10 Cos.)	Seattle, Tacoma, and Everett, Wash.	1/ 1/50	2c	MCBW—A—850	Plus $3 flat bonus for all employed during mo. of 12/49.
Metal Working					
American Smelting & Refining Co.	Denver, Colo.		5c	MMSW—C—500	
Gardner-Denver Co.	Denver, Colo.		None	USA—C—600	Co.-pd. pensions—$100 mo. incl. Soc. Sec. benefits at 65 after 25 yrs.; contributory ins. program to cost co. and empls. 2½c hr. each—sick & acc. benefits; hosp. surgical & maternity benefits for empls. and families.
American Smelting & Refining Corp. (Arkansas Valley Smelter)	Leadville, Colo.	1/ 1/50	5c	MMSW—C	
Kennecott Copper Corp., Utah Copper Div. (mills)	Arthur and Magna, Utah	12/16/49	5c	MMSW—C—1,500	
American Smelting & Refining Co.	Garfield, Utah	12/16/49	5c	PMWC—C—1,200	Contributory social ins. program for empls. and families; 3 wks. vac. after 20 yrs. (prev. max. vac. 2 wks. after 5 yrs.)
Solar Aircraft Co.	San Diego, Calif.		5c	IAM—I—800	Plus add. 2c inc. in min. and max. rate range.
Northwest Wire Works	Seattle, Wash.	2/13/50	None	USA—C	Automatic wage increases, 7 pd. hols.; 2 wks. vac. after 5 yrs. (1st contract).
American Smelting & Refining Co.	Tacoma, Wash.	1/ 1/50	2½c	MMSW—C—1,100	Health-welfare program and ins. plan. (equivalent to 2½c hr.)
Mining and Quarrying					
U. S. Potash Co., International Minerals & Chemical Corp., and Potash Co. of America	Carlsbad, N. M., area	1/31/50	None	MMSW—C—1,200	Changes in working rules.

Rain Shield for Fork Lift Truck



• A little thing like rain won't stop the Seattle Port of Embarkation lift trucks from operating any more, now that they have these nifty plastic rain hoods to use.

CONTRARY to Mark Twain's remark that nobody does anything about the weather, something is being done at the Seattle Port of Embarkation about the rain: plastic shields are being installed on a fleet of fork lift trucks to keep drivers of these open-air vehicles bone-dry while working in rain.

The "rain-shield" is made of a transparent flexible material called Vinylite, one-sixteenth of an inch thick, which fastens underneath the metal safety guard above the driver's head. The shield is 66 inches long, and slopes downward at each end. It is 40 inches wide and is framed with plywood strips.

Though the Port has 223 various-sized fork lift trucks, only 40 high lift trucks, which work out-of-doors, have been rigged with the shield constructed by the Headquarters Commandant Carpenter Shop at little extra expense except for the cost of the Vinylite.

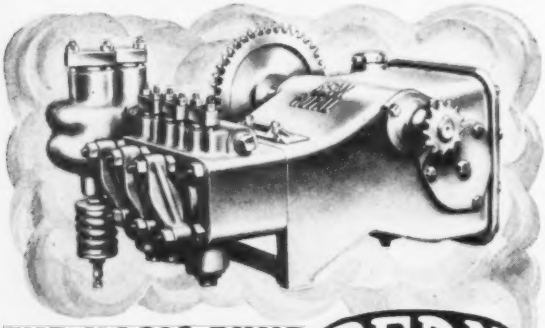
The idea of the shield was conceived by Brigadier General Fenton S. Jacobs, Port Commander, who was keenly concerned about the fork lift drivers he saw rumbling along the piers with heads bent trying to dodge the rain and snow. He wanted to know why some type of canopy couldn't be built inexpensively which would shelter the driver and still give all-around visibility.

Drivers in the past placed heavy paper or cardboard beneath the safety guard, which partially obstructed their visibility.

General Jacobs pointed out that not only would such a device add to the personal comfort of the driver but would also increase his efficiency and reduce the possibility of accidents.

The shops of the Headquarters Commandant Division and the Ordnance and Chemical Division immediately constructed three sample rain tops which were tested under actual operating conditions by both civil service drivers and contract longshoremen.

As a result of the tests—and upon the recommendations of the operators—the sample constructed by the Headquarters Commandant Division was unanimously selected. The design for the rain shield was made by Edwin R. Olson, carpenter shop foreman.



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Kaiser Steel Cinches Coking Coal Supply

TRANSFER of the ownership and management of Utah Fuel Co. to Kaiser Steel Corp. is, to all appearances, being accomplished with a minimum of disturbance to the organization and established trade relations.

By acquiring the company through purchase of the entire capital stock which had been pledged to secure indebtedness of the Denver & Rio Grande Western railroad, the Kaiser interests assured themselves of a long-time source of coking coal for the Fontana steel plant. This coking coal was undoubtedly the asset which boosted the successful bid to the unexpectedly high figure of $6,800,000.

The Empire Expands

In addition to the metallurgical coking coal, the expansive Kaiser industrial enterprises acquired a major domestic fuel producing firm which operates four mines in Utah and three in Colorado; a distributing subsidiary which operates a network of coal yards and retail sales offices; an improvement company which owns 246 modern homes for mine employes in the Sunnyside, Utah, area, and a livestock grazing firm to utilize forage on land holdings.

While in Salt Lake City to formally take over the properties, Jack L. Ashby, vice-president and general manager of the Kaiser Steel Corp., announced that the fuel company would continue to be operated as a unit for the time being and that Claude P. Heiner, president under the old ownership, would be retained as management consultant. The retention of Mr. Heiner can be interpreted as a tribute to his managerial ability and contacts, inasmuch as he undoubtedly cost the Kaiser firm a substantial amount of money by bidding the price up on the financial backing of interests which were not publicly disclosed but which were reported to include U. S. Steel Corporation and some large coal and coke customers of Utah Fuel.

While the coking coal reserves held by Utah Fuel Co. would have been an attractive addition to the raw material holdings of U. S. Steel Corp., purchase of the properties by the Kaiser interests does not leave the corporation's Geneva subsidiary in a bad position with respect to coal. Accurate tonnage figures are not available, but company sources figure that Geneva has known coking coal reserves to last from 75 to 100 years at a consumption rate of around 2,000,000 tons per year. The company recently acquired a lease on an additional 2,600 acres of federal lands which are known to contain satisfactory coking coal. There are other large potential sources in the state (closer to Geneva than Sunnyside) which haven't been fully investigated yet.

Here's the Attraction

The chief attraction of the Sunnyside mines of Utah Fuel is that they produce a somewhat better quality of coking coal than any of the other properties which have been developed.

Mr. Heiner had been a top-ranking executive of the company for nine years and his father, the late Moroni Heiner, was associated with it from the time it was organized. In this area the names "Heiner" and "Utah Fuel" are closely linked in the public mind,

Continued on page 62

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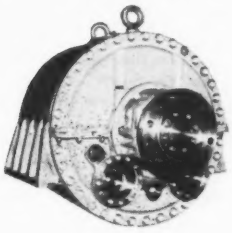
Many configurations of internal gearing have been produced. The commonest in reasonably standard usage, and which can be economically manufactured, are the helical-tooth and straight-tooth designs.

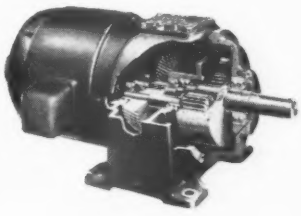
sample applications

A straight-tooth internal gear is used in the final reduction of this industrial Pacific, G-E Motorized, Speed Reducer (below right).

In this planetary marine propulsion unit, helical-tooth internal gearing is employed (below left).

Both units are typical Pacific-Western products—properly designed, employing the right type of gearing for the application.





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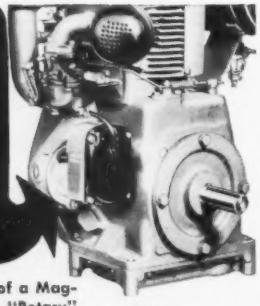
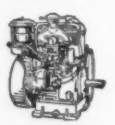


Perhaps you have never given much thought to the placing of a Magneto on an engine, nor whether it's of the "flywheel" or "Rotary" type. It's an important point because the magneto is really the heart of the engine. When it fails, your power fails.

Wisconsin engineers have found through long experience and experimentation that the best place to put the magneto, not only for convenient accessibility but for better ignition performance over an extended period of time is on the OUTSIDE . . . with an independent, direct drive from the engine to the Magneto. The Rotary Type high tension magnetos used by Wisconsin Air-Cooled Engines provide the greatest protection against ignition troubles because the Magneto itself is a complete, independent operating unit that doesn't rely on an unrelated part of the engine for its successful operation. It's tightly sealed against dust and moisture, of course, so it isn't affected by wet weather or snow and there is no chance of it getting "fouled up". And it's equipped with an *Impulse Coupling* that provides a quick, hot spark for easy starting in any weather, in any climate, a feature that can't be incorporated in flywheel-type magneto.

Yes, the MAGNETO is important . . . both as to *type* and *placing* on the engine. It's the *right kind* and in the *right place* on Wisconsin Heavy-Duty Air-Cooled Engines. Specify "Wisconsin" for your 3 to 30 hp. power needs. . . . Descriptive literature on request.



WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
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Continued from page 60

a fact which undoubtedly prompted his retention at least for the transition period.

Kaiser Steel and Utah Fuel, of course, are not business strangers, as the Fontana plant has been the No. 1 customer of the fuel firm for the past eight years. In recent years Kaiser has leased one of the Sunnyside mines to obtain his coking coal supply. As a result, the steel company already had 300 employees in the setup and now becomes the boss of an additional 1,300.

In commenting on the transfer of ownership, Mr. Heiner pointed out that acquisition of the property by Kaiser will be "beneficial in many respects." The most obvious benefit is that it will give the fuel company a certain market for a large slice of its production (about 1,000,000 tons annually with Fontana operating close to capacity).

"Kaiser Steel," said Mr. Heiner, "is a successful, growing concern . . . Its relations with employes and customers are of the highest order. I have no hesitancy in recommending the management of the Kaiser organization to our employes, our trade connections and the people of Utah."

Henry J. Kaiser announced that his organization would, in operation of the property, aggressively seek to expand the Utah coal industry.

Million Tons of Cargo

Port of Stockton passed the million mark in tonnage in 1949, reports Director Elmo E. Ferrari, the exact amount being 1,111,820 short tons in a period of transition from large volume government movements to increased private commercial shipping. The latter came largely from food processors who were able to save from $1 to $1.50 a ton by a cheaper rate through Stockton.

Test Your Wits

A queen (weighing 170 pounds), her son (weighing 80 pounds), and her daughter (weighing 90 pounds) were all imprisoned in a tower. Outside of the window a rope ran through a pulley and at either end of the rope was a basket. One basket hung right outside the window. The other rested on the ground and had a 75-pound cannon ball in it.

At no time could the weights in the baskets differ more than 15 pounds or someone would get his neck (or arches) broken.

How did they all get down from the tower?

Answer on page 64.

Less Weight Means More Safety

A good sailor can do practically anything required of him aboard ship. But he can't handle the gangplank, for two reasons: (1) he is not permitted to, and (2) up to now, gangplanks have been so heavy and awkward that it was not safe.

Gangplanks always were heavy, cumbersome wood structures until *Magnesium Company of America* developed one that retained all the improvements to date, plus the important factor of light weight.

For instance, a 36-foot passenger gangplank that used to weigh 1,600 pounds when made of wood, now weighs about 500 pounds when made of magnesium. One other result, and fully as important, is that it is now safe and easy to handle without mechanical equipment.

MAGCOA now produces these gangplanks in sizes ranging from 12 to 40 feet in length. Pictured is a standard 36-foot unit in use on one of the Shell Oil Company tankers.

U. S. Bureau of Mines Completes Regional Organization

Regional organization for Region IV of the U. S. Bureau of Mines has been made with headquarters in Denver. All bookkeeping and finances for the region will be handled in Denver, and payments will be made from the disbursing office there instead of from Washington. Region IV includes all bureau activities in Colorado, Wyoming, Utah, Arizona and New Mexico, and oil operations in Montana.

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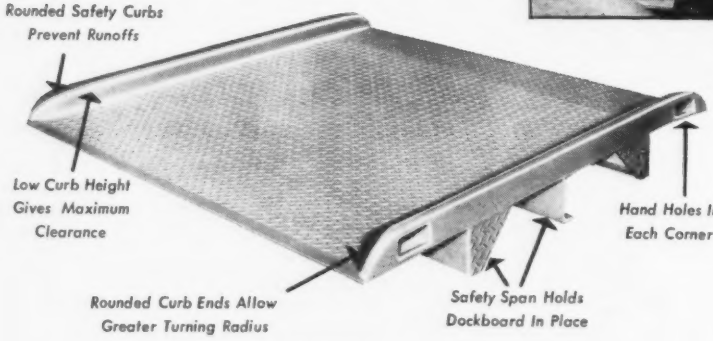
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Pacific Ports Decline

Failure of intercoastal and coastwise shipping to regain its prewar position is the principal cause of a 15.4% decline in tonnage handled by Pacific Coast ports between 1939 and 1949, according to the Pacific American Steamship Association. In export-import cargoes, the ports were only 2.8% under 1939.

Test Your Wits

Answer to problem on page 62.

The boy descended first, using the cannon ball as a counterpoise. The queen and her daughter then removed the cannon ball; the daughter descended, while the boy served as a counterpoise. The cannon ball was then run down alone.

Daughter and cannon ball then served as a counterpoise while the queen was lowered. Cannon ball again sent down alone.

Boy went down with cannon ball as counterpoise. Daughter removed cannon ball and went down with brother acting as counterpoise. The brother lowered the cannon ball, hopped in the basket, and was lowered with the ball as counterpoise.

Then he jumped out and they all ran like the dickens, before the ball came crashing down.

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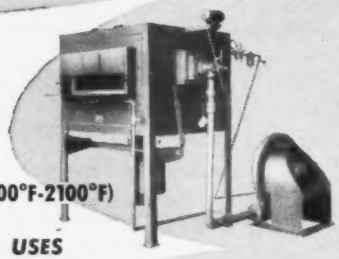

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Engineering College Research Council

A comprehensive survey of engineering research activities in the Pacific Northwest will be provided by the conferences of the Engineering College Research Council during the 1950 annual convention of the American Society for Engineering Education at the University of Washington, Seattle, June 19 and 20.

Speakers will include S. E. Schultz, chief engineer for Bonneville Power Administration; Samuel J. Hutchinson, assistant regional director of the Fish and Wild Life Service; Don Walters, director of the Inland Empire Research Council; H. K. Benson, director of Research for the Laucks Company; W. W. Moyer, director of research at Crown Zellerbach Corporation; Don Redfern, technical director of American-Marietta Corporation; S. E. Maddigan, director of the British Columbia Research Council; and Donald W. Finlay of the Seattle division, Boeing Airplane Company.

The A.S.E.E. convention will be in session from June 19 to 23, with the University of Washington acting host.

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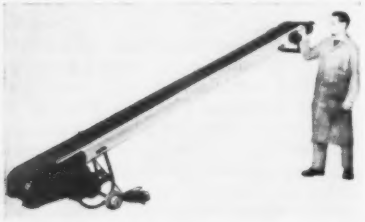
Stevedore, Jr.

A lightweight aluminum Stevedore, Jr., power belt conveyor less than 350 lbs., and mounted on two wheels, can be rolled into position like a wheelbarrow. It is furnished in 10″ and 16″ belt widths, and in five lengths, from 11 to 21 ft. It operates both ways, and



from horizontally up to 40°, depending upon belt surfacing and materials conveyed. Maximum width is 17″ (on 10″ belt model) and 23″ (on 16″ belt model). *Rapids-Standard Co., Inc., Grand Rapids, Mich.*

E-65011

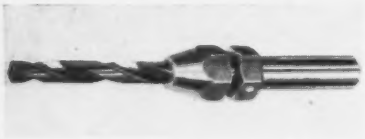
Miti-Mite Magnetic Base

Miti-Mite is *Enco Mfg. Co.'s (Chicago, Ill.)* name for their new magnetic base holder for test indicators or Handi-Lites. This base has universal ball and socket joint and swivel arm construction. Can be mounted on any iron or steel surface, either round or flat. Powerful Alnico magnet exerts about a 50-lb. pull. Bulletin 600 tells all.

E-65012

Salvation for Broken Drills

Drills too short, broken, or badly galled, work as good as new when used in this new collet chuck manufactured by *Zephyr Mfg. Co., Inglewood, Calif.*



Chuck has ¼″ straight shank for use in drill press or portable model. Made in sizes for all straight shank drills from #50 to "F." Each chuck may be used only for specified size.

E-65013

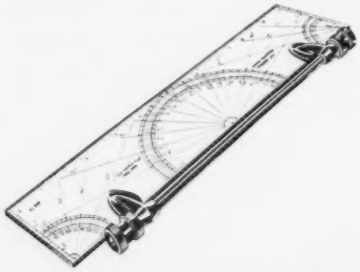
Music Wire From Swedish Rod

Johnson Steel & Wire Co., Inc., Worcester, Mass., manufacturers of music wire, announce that all their music wire production is now being made from imported Swedish rod. A continuous supply is assured, and sizes range from .003″, 38,026 ft. to the lb., up to .200″, 9 ft. to the lb.

E-65014

Portable Drafting Machine

"Paraline" is the name of this handy pocket-size portable drafting machine now marketed by *Loomis Industries, Piedmont, Calif.* Paraline measures only 10¼″ x 3-3/16″ o.a., has sturdy transparent section and precision-



machined moving parts. Can be used as T-square, parallel rules, triangle or drafting machine without any adjustments or additional parts. Requires no clamps or board mountings to remain in alignment.

E-65015

10,000-lb. Capacity Fork Lift Truck

Known as the "Utilitruc-100," a new unit produced by *Clark Equipment Co., Battle Creek, Mich.*, is gasoline-powered, equipped with Dynatork Drive, and has a 5-ton lifting capacity. Overall length is 107″; wheelbase is 66″; overall width is 50½″, and outside turning radius is 104″. Not available for export sale.

E-65016

New Blast Cleaning Abrasive

A sharp, fast-cutting abrasive that retains its abrading qualities even when reduced to fine material, replacing silica sand for blast cleaning and finishing operations, is offered by *American Wheelabrator & Equipment Co., Mishawaka, Indiana.* Called "Black Beauty," it is non-metallic and silica-free. Wears two to five times as long as sand, is non-corrosive and stainless, flows freely, does not rust, pack, or harden. Comes in a variety of sizes.

E-65017

Ball Corners Formed On Standard Press Brakes

Verson Allsteel Press Co., Chicago, have developed a new tool-up whereby it is possible to form ball corners in standard press brakes at a saving of 30¢ to 50¢ per panel over conventional methods. Ball corner panel is completed in only two handlings, on existing equipment. No new press is needed. This method is easily adapted to wide variety of sizes, eliminates corner welding and finishing, reduces product handling.

E 65018

Seeing Eye Screwdriver

This forged-chrome Vanadium blade screwdriver is housed in a break-proof, shock-proof, fireproof Amberyl housing, and is durable for long wear.

Handle holds a flashlight bulb, penlight battery (both available at the dime or drug store) and a directional

Items evaluated by Western Industry's technical advisors on basis of information supplied by producer.

Postage Will be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD

First Class Permit No. 3755, Sec. 34.9, P.L.&R., San Francisco, Calif.

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609 Mission Street,

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Information Bureau, WESTERN INDUSTRY

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Also further information on the following products advertised in this issue:

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Name _____ Title _____

Company _____

Address _____

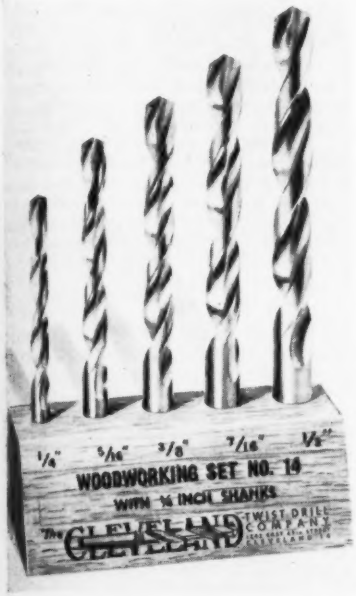
City _____ Zone _____ State _____

lucite lens that throws a circle of light where you need it. Operates by turning a knurled knob in the handle dome and remains "on" until turned off. Switch does not interfere with manipulation of screwdriver. Comes in different sizes, from *Vaco Products Co., Chicago.*

E-65019

Drill Set With All ¼" Shank

A new set of woodworking drills now makes it possible to bore holes up to ½" dia. with any drill press, or drill having standard ¼" chuck. This set



contains sizes ¼", 5/16", ⅜", 7/16" and ½", all with ¼" shank. Single drills may be bought separately. Precision ground and made of best chrome alloy steel, by *Clevcland Twist Drill Co., Cleveland, Ohio.*

E-65020

Variable Speed Motor Transmission

"Fra-Sure" variable speed transmissions for fractional horsepower motors using V-belts, are neat, simple, useful devices for speed control. Constant selected speeds are easily adjustable by a simple knob movement, and the automatic speed-locking device keeps pulleys in desired position and alignment throughout the entire 3 to 1 ratio. These transmissions are simple to install, can be mounted anywhere, in any position on a machine, operate efficiently in any position, and are remotely controlled if desired. Units available from *Frazier & Son, Belleville, N. J.*

E-65021

Motorless Sprayer

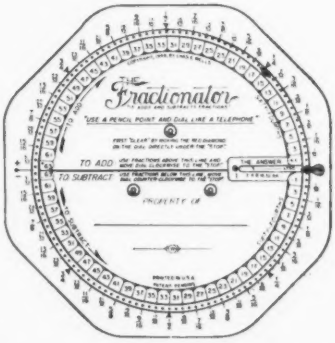
A self-contained pressure sprayer designed for use with paints, disinfectants etc., operates without motor,

compressor or electric power, is noiseless, clean, non-fogging. Consists of a 2½-qt. steel container tested up to 150 p.s.i., but requires only 70 p.s.i. to operate. Has a hand pump, pressure gage, air release valve, proper hose, and 7-oz. spray gun. Produced by *No-MOTOR Corp., Cincinnati, Ohio.*

E-65022

Fractionator

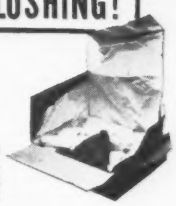
If you can add 3/16, 9/64, and ¼, then subtract from the sum, 5/32, ⅜, and 7/64 and give the answer (and decimal equivalent) in the time it takes you to read this, you don't need



this device. But if you can't, and if you use figures like those, this "Fractionator" is the answer. Just select your fractions on the outer edge of the calibrated circle and dial the answer just as you would your favorite telephone number. As simple as that, accurate up to six figures, and direct reading in both fractions and decimals. Available from *Charles E. Wells, P. O. Box 25, Montrose, Calif.* He developed it.

You, too, can *Cut Packaging Costs* with Angier VPI* Wrap

Vapor alone does it! Inside this overseas-bound crate, Angier VPI Wrap slowly releases an invisible protective vapor around Shop-Smith that **prevents** rust!



Small parts exported with Magna Engineering's famous woodworking tool are individually packaged with Angier VPI Wrap. No slushing required!

Save all slushing costs or spraying or dipping costs!

Save all cleaning costs for your distributors or dealers!

Save equipment costs—"VPI Wrap" requires no machinery to apply!

AND Eliminate costly rejects!

So effective is this proven vapor wrap that rejects due to rust are eliminated! If you ship or store metal parts or products, why not *simplify* your packaging with Angier VPI Wrap and SAVE!

*Vapor rust preventive

FREE 20 pages of case studies tell how "VPI" cuts packaging costs.

Angier PACIFIC CORPORATION
55 New Montgomery Street
San Francisco 5, California
Industrial Packaging Engineers Since 1895

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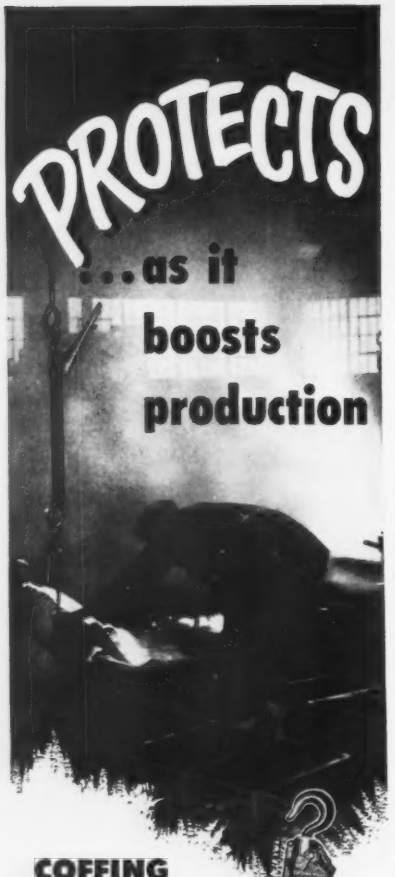
Yes Send case studies of your revolutionary vapor rust preventive to:



COFFING SAFETY-PULL RATCHET LEVER HOIST

Just as important as the time- and labor-saving advantage of Coffing Hoists is the way each one protects your men from injury, your equipment from damage.

Each Safety-Pull has a ratchet pawl that cannot slip . . . holds securely even if operator's hand slips off the handle. Each one is factory tested at 100 percent above rated capacity, and "safety-valve" handle protects against overloads. Ten models handle any lifting or pulling job up to 30,000 lb. Learn how these and other Coffing Hoists listed below can give *protected* production — worker satisfaction. Write for Bulletin WI6SP.

COFFING HOIST CO.
DANVILLE, ILLINOIS

Quik-Lift Electric Hoists • Hoist-Alls
Mighty-Midget Pullers • Differential Chain Hoists
Spur-Geared Hoists • Load Binders • I-Beam Trolleys

HELPFUL LITERATURE

for the plant operator who wants to keep informed

6501-L

MODERN MOTOR CONTROLS — A handy reference book on modern motor controls has been issued by *Allen-Bradley Company, Milwaukee 4, Wisconsin.* It is the fourth edition and comprises 76 pages of condensed information, dimensions and prices of the more popular items in the Allen-Bradley line. Requests for copy, written on company letterheads, will receive prompt attention.

6502-L

WATER SOFTENING BY HYDROGEN ZEOLITES—A recent article published by *Graver Water Conditioning Co., New York 11, N. Y.*, presents operating data from several commercial hydrogen zeolite installations, and also explains the applications of acid-regenerated zeolites, compares sulfonated coal type and resin type zeolites, and discusses the various factors involved in establishing conclusions as to the effectiveness of this method of water softening, including silica removal.

6503-L

TRUCK-MOUNTED SHOVEL-CRANES—Just off the press is Catalog #2322 published by *Link-Belt Speeder Corporation, Cedar Rapids, Iowa.* This publication covers applications, construction details, customer benefits and specifications of the new HC-51 Truck-Mounted Shovel-Crane with Speed-o-Matic controls, front drum reversing mechanism for power control load lowering (particularly advantageous for steel erection) and a heavy duty carrier specifically designed for truck-crane operation.

6504-L

REMOVAL OF UNWANTED ELEMENTS FROM STEAM—A new 12-page bulletin #S-14-C is presented by *The Swartwout Company, Cleveland 12, Ohio,* covering the company's complete line of separators for removing unwanted elements from steam, air and other vapors. This two-color bulletin is profusely illustrated with photographs, diagrams and line drawings and gives full specifications, selection and ordering data on Swartwout helicocentrifugal separators.

6505-L

UNDERGROUND PIPE INSULATION —The newly revised version of the Zonolite Company's 8-page colored brochure "Z-Crete Underground Pipe Insulation" put out by *Z-Crete Division, Zonolite Company, Chicago 3, Illinois,* points out that Z-Crete is a lightweight resilient concrete used for the insulation of heated piping installed underground and is a permanent insulation for any number of steam, oil or hot liquid lines, and is also suitable for new work or for replacing worn-out underground systems.

6506-L

VALLEY AUTHORITIES IN IDAHO—*The Chamber of Commerce, Twin Falls, Idaho,* announce the publication of a six-page report on "Governmental Affairs" containing information on "Valley Authorities" which has been acclaimed one of the most thoughtful and forceful presentations of the valley authority question as it affects all parts of the United States. It discusses omnibus legislation and the CVA bill, points out the issues and sets forth the National Chamber policy. Copies may be obtained through local chambers of commerce anywhere in Idaho.

6507-L

REFRIGERATED WAREHOUSING INDUSTRY FOLDER—A new two-color folder describing the functions and importance of refrigerated warehousing in perishable food distribution has just been released by the *National Association of Refrigerated Warehouses, Washington 5, D. C.* It is called "Q. A.—Answers to the Most Frequently Asked Questions About Refrigerated Warehouses." Q.A. tells its story in sixteen brief, concise questions and answers, supplemented with photographs of cold storage operations. The extent and variety of cold storage services are also brought out.

6508-L

PRODUCTION PLANNING AND CONTROL IN OFFICE OPERATIONS—How to get speed, quality and economy in large-scale office production is spelled out in an 80-page booklet on Production Planning and Control in Office Operations issued by the *Bureau of the Budget.* Published for the use of Federal agencies in connection with the President's government-wide management improvement program, the new management bulletin is also being made available to private business firms and the general public. Copies may be obtained for 35 cents from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

6509-L

U. S. PATENTS WELDING INFORMATION—The department of welding engineering at *Ohio State University, Columbus 10, Ohio,* announces completion of a new Patent Classification Index in the A. F. Davis Welding Library, designed to make information on more than 12,000 U. S. patents on welding more easily available to industry and educational institutions. Each patent is classified or indexed in several different ways—by process, material, product, use, inventor's name, date of issue, etc., on a single keysort card. These cards are sorted mechanically, and in very little time the numbers of patents pertaining to a given field may be determined. Most of the searches can be accomplished in from 3 to 20 minutes, and their value is limited only by the completeness of the patent file.

6510-L

"GM DIESEL QUIZ" is a new pamphlet describing features, characteristics and application of the General Motors Diesel engine by *Detroit Diesel Engine Division, Detroit 28, Michigan.* Designed in the popular questionnaire format, the "Quiz" provides simple, easy-to-understand answers to 17 basic questions about design and operation of GM Diesel engines.

READING GUIDE FOR WESTERN MANAGEMENT

A service for all management levels . . . current literature surveyed and appraised by the faculty of the School of Management, Golden Gate College

Tested Training Techniques

By Kenneth B. Haas and Claude H. Ewing, Prentice-Hall, Inc., New York, 1950, $1.50.

In an era of boiled down "how to do it" books—how to speak in public, make a million dollars, win friends, and pay your income tax in ten easy lessons—it was inevitable that someone would appear with a two syllable, easy to read book on training techniques. *Tested Training Techniques* fills the bill. In a simple, snappy, frequently jocular manner authors Kenneth B. Haas and Claude H. Ewing take the reader on a breezy tour through the chapters of: Do You Know Your Stuff, What Ho—The Learner, Hi Ho, the Instructor, Productive Training Methods, Individualized Training, Mechanics of Handling Group Meetings, Punching Up Your Group Meetings, Show—Don't Blow, Patching Up the Holes, and Supervision and Follow-Up Training, where, as anyone with a lick of sense can readily see, they reveal their ideas on personnel training.

The authors practice what they preach. They prepare the learner, "make him aware of needs or problems," present the material to be learned, "tell, show, demonstrate," and make the experience of reading the book as pleasant and painless as possible. The book is replete with illustrations: cartoons, diagrams, pictures, charts, and even photographs of three dimensional models.

At its best, the book is the meat of the subject concisely and wittily presented. At its worst, it is Job Instruction Training with slapstick.

However, here is a book which my old maid teachers in grade school should have read and one that many teachers and industrial trainers can profit by. Although it contains little that can't be found elsewhere, it presents in a simple down-to-earth manner the highlights of training techniques many of which are neglected by even the experienced trainer or teacher. Its 111 pages can be read easily and profitably in an hour's time. The pay-off is in putting the authors' ideas into practice.

Reviewed by:

HAROLD E. ATKINSON
Lecturer in Human Relations.

Collective Bargaining Principles and Cases

By John T. Dunlop, Richard D. Irwin, Inc., Chicago, 1949, $5.00.

The study of labor-management relations is brought to much sharper focus by coupling with the discussion of the general principles involved in each phase of the subject a number of specific cases. The cases are much more effective when they illustrate how certain aspects of each problem arise in the employment and union-management relationships existing in the plant or office. Such a study of cases can provide a background which could otherwise be gained only by years of experience in dealing with similar problems.

In *Collective Bargaining Principles and Cases* (Irwin) Author John T. Dunlop of the Harvard faculty has collected seventy cases involving problems in labor-management relations, which he groups under nine headings. Part I of the book is subtitled "An Introduction to Collective Bargaining" and covers the subjects of collective bargaining, national labor policy, union and management organizations for collective bargaining, the labor agreement and standards for wage determination.

In Part II the author presents a brief discussion of such bargaining problems as discharge and discipline, union security, employment rights, work schedules and premium pay, vacation provisions and wage structure, each followed by several illustrative cases. Each case is one which has been presented as a grievance for an arbiter's decision. The decision is not given, but instead the author poses several questions designed to direct the reader's attention to the basic problems involved in each situation. The use of this book should be extremely effective in a study group on labor-management relations such as supervisors' or foremen's conferences or executive training classes.

Reviewed by:

THEODORE B. LYMAN
Lecturer in Labor-Management Relations.

Briefer Guides From The Management Library

Airline Traffic Procedures

By Gene Kropf. McGraw-Hill Book Co., 1949, $5.50.

This book starts with a discussion of rail, bus and steamship traffic problems as a background for the study of airline traffic problems. Airline reservation procedures, ticketing, passenger handling, advertising and public relations are then considered. Information from current airline traffic manuals has been used as a basis for the discussion.

Sales Idea Book

By editors of *Printers' Ink*. Funk & Wagnalls Co., New York, 1949, $5.00.

A collection of 479 tested sales ideas chosen from *Printers' Ink* idea file. Classified for easy reference are: 152 ideas for selling in person, 100 ideas for selling by mail, 139 ideas for selling in print, and 88 shortcuts and time-savers.

Successful Radio Advertising

By Robert I. Garver. Prentice-Hall, Inc., New York, 1949, $5.75.

Addressed primarily to the small-budget advertiser, this book assembles facts and figures, plans and policies, relating to the field of sponsor-participation program. Analyzing every type of sponsor participation program, pointers are given how to choose the right program for your product or service, how to obtain the best results, and how to pre-test programs.

Television As An Advertising Medium

By Phillip A. Bennett. U. S. Department of Commerce, Washington, D. C., $.60.

Here is an analysis of current facts regarding the television industry, and a review of apparent potentialities. Statistics are included on stations in operation; sets installed, areas covered; cost of time, programs, and commercials, and the influence of television on advertisers and advertising agencies.

Business Letter English

By H. O. Robertson and V. H. Carmichael. Gregg Publishing Company, New York, 1949, $3.00.

A new book that presents the fundamentals of English and applies them to business letter writing. It covers in related sequence a sound review of grammar, good usage, the principles of composition, and the construction, planning, and writing of business letters.

Reviewed by:

BERNA M. CARLSON
College Librarian

THE WEST ON ITS WAY

ALASKA

FAIRBANKS CHEMICAL PLANT CONSTRUCTION—Construction begins on a $250,000 chemical manufacturing plant in Fairbanks, the first of its kind in Alaska. The business will be known as The Alaska Chemical Co. and will supply such materials as acetylene and oxygen to the Anchorage area.

ALASKAN WATERFRONT PROPERTY LEASED BY PERMANENTE—A lease has been signed between Alaska Railroad and Permanente Cement Company on a section of waterfront property in Anchorage, Alaska, for the purpose of erecting a cement distribution plant to serve the rail belt area of Alaska. The facility, which will include bulk storage silos, sacking machinery and dockage, will be designed to permit the most efficient handling of overseas shipments of bulk cement. Permanente's bulk cement carrier, the S. S. Permanente Silverbow, has been pressed into full-time service to supply increased demands in the Northwest, including the company's facilities at Portland and Seattle, as well as the additional requirements necessary for the proposed Alaskan facility.

ARIZONA

MIGHTY MIDGET PLANT OPENS—The Mighty Midget Corporation (soft drink dispensing machine) opens its new Phoenix plant at 2824 East Washington Street, with 8,000 square feet of floor space.

RUST-PROOFING INC. ACQUIRES CALIF. BUSINESS—Rust-Proofing Incorporated, P. O. Box 1671, Phoenix, acquires the business formerly owned by Leo O'Connor at 12810 S. Vermont Street, Los Angeles. The new company will be operated as The O'Connor Rust-Proofing Co., as a branch of the Phoenix firm, and will be managed by Leo O'Connor.

$5,000,000 CONTRACT TO REBUILD TANKS—Bowen & McLaughlin Co., Phoenix, receives a $5,000,000 defense contract to rebuild "General Sherman" medium-sized tanks for the U. S. Army. The company will make major overhauls on the tanks, including installation of new engines, as part of the Army's tank modernization program.

CALIFORNIA

$750,000 CONTRACT TO RYAN AERONAUTICAL CO.—Ryan Aeronautical Company receives a reported $750,000 contract from Boeing Airplane Company, San Diego, for aft fuselage sections, cargo doors and floor beams.

$1,000,000 BUILDING PROJECT FOR REPUBLIC—Republic Pictures, Inc., North Hollywood, announce plans for a $1,000,000 construction and expansion program, the first step of which will be construction of a new $100,000 editorial building containing 3,000 square feet. It will include eight cutting rooms equipped with the newest facilities for cutting and editing film. Other plans call for a 16-office addition to the Administration Building, at least one new sound stage and modernization of other buildings now standing.

3,000 NEW EMPLOYEES FOR CONSOLIDATED VULTEE—3,000 employees will be added by Consolidated Vultee Aircraft Corp. to its San Diego division payroll to modify B-36 bombers.

GEARS

- The Right Gear in the Right Place
- Custom made for your application
- Quality Materials
- Accurate Teeth

SPUR • HERRINGBONE
BEVEL • HELICAL
WORM • RACKS
SPROCKETS

GEAR CUTTING • GRINDING • MACHINE WORK

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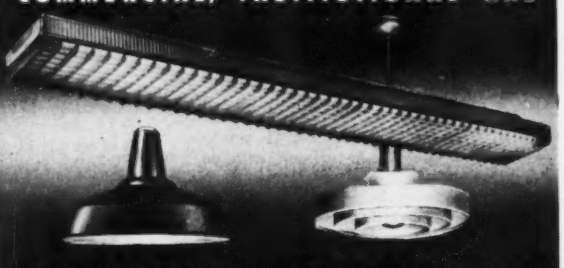
LIGHT MANUFACTURING • HEAT TREATING

JOHNSON GEAR
AND MANUFACTURING CO.
"43 Years Service to Industry"
8th & PARKER STS. • BERKELEY, CALIFORNIA

PLANNED LIGHTING FOR ALL

COMMERCIAL, INSTITUTIONAL AND



INDUSTRIAL INSTALLATIONS

ILLUMINATION EQUIPMENT
SMOOT-HOLMAN
INGLEWOOD, CALIFORNIA
MADE IN U.S.A.

OFFICES IN PRINCIPAL WESTERN CITIES • BRANCH AND WAREHOUSE IN SAN FRANCISCO

THE WEST ON ITS WAY

CHANGE OF LOCATION—Hammond Manufacturing Corporation moves from 6161 Maywood Avenue, Huntington Park, to 2710 East Foothill Blvd., Pasadena, Calif. Telephone, Sycamore 6-7191. Increased manufacturing facilities will be available at the new location, with the same management and personnel.

LONG BEACH PLANT BOUGHT BY MONSANTO—Monsanto Chemical Company acquire plant on a nine-acre site, for the manufacture of its Styrene moulding compound. The plastics factory expects to be in operation by August.

WESTGATE-SUN HARBOR ACQUIRES SARDINE PLANT—Westgate-Sun Harbor Company purchases Sun Harbor Packing Company's sardine plant at Monterey. Plans call for modernization and enlargement of the Monterey plant in time for the 1950-51 packing season.

BATTERY SERVICE SHOPS COMING BACK—Pioneers, Inc., 2411 Grove Street, Oakland, Calif., have established two battery service shops in Oakland, one in Stockton and one in San Jose. Pioneers, Inc., plant to locate additional battery service shops which will offer a complete line of battery service to industrial users of lead-acid batteries.

HOFFMAN RADIO PURCHASES PLANT—Hoffman Radio Corporation, 3761 S. Hill St., Los Angeles, purchase plant at 3415 S. Grand, and will manufacture electronics equipment for the government.

HOLLY MEAT PACKING COMPANY EXPANDS—Plans are under way by Holly Meat Packing Company to erect a one-story concrete structure containing 21,000 square feet to be used as a new jobbing, hotel and restaurant supply plant adjoining its present location at 2737 Magnolia Street, Oakland, at an estimated expenditure of $300,000. The expansion will provide 30 new jobs.

GOLDEN STATE BUYS—Golden State Company, Ltd. purchases the Land O'Gold Milk Products Company, Inc., Redding. Modernization of its facilities and equipment begins immediately. James A. Mason, who acted as the creamery's manager, continues in Golden State's service.

GOLDEN STATE BUILDS—Golden State Company, Ltd. plans to construct a new warehouse covering 12,000 square feet adjoining its evaporated milk plant at Newman. The new building will have Strestcrete walls, and the interior will be designed to facilitate palletized product handling.

RYAN AERONAUTICAL RECEIVES $1,000,000 CONTRACT—General Electric Co. awards Ryan Aeronautical Co. a $1,000,000 extension of its contracts for additional quantities of the jet engine parts Ryan has been manufacturing for the past two years.

ONTARIO PLANT TO PROCESS FROZEN ORANGE CONCENTRATE—Minute Maid Corporation begins operations to process frozen orange juice concentrate at the California Fruit Growers Exchange plant in Ontario. Packing operations will begin in July.

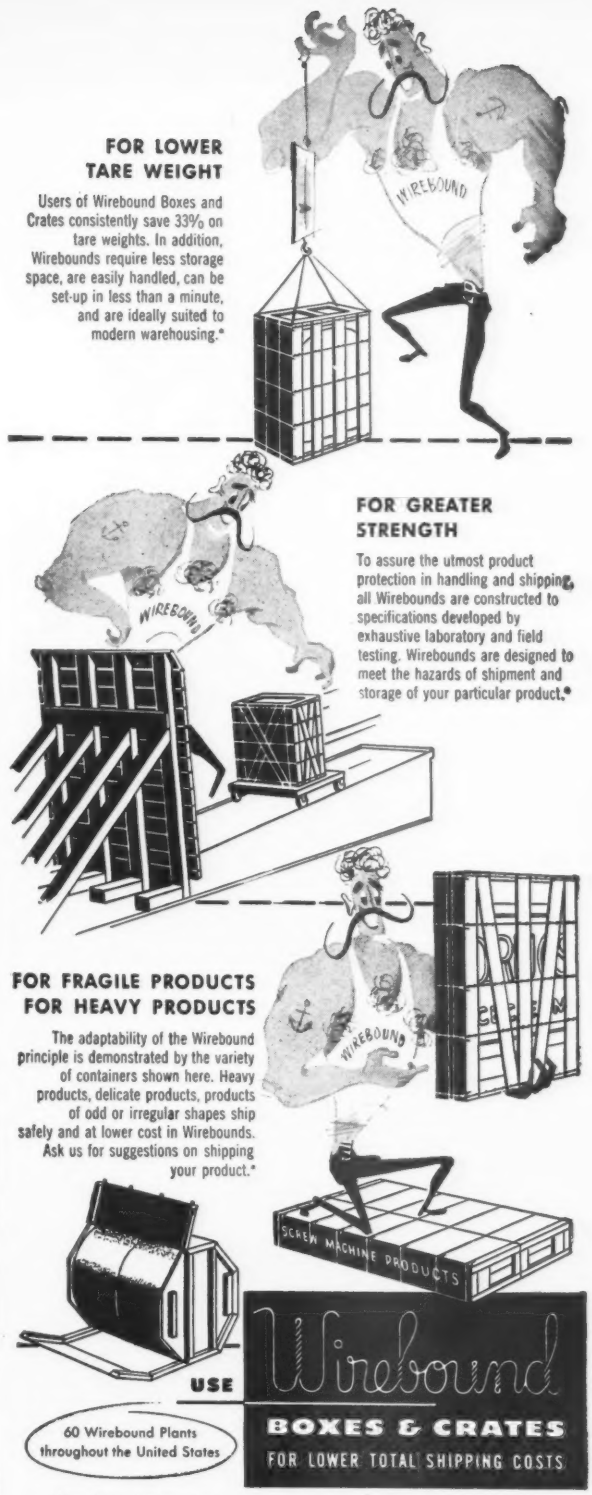
$17,500,000 DIESELS ORDERED BY S. P.—Southern Pacific Company places orders for $17,500,000 worth of additional diesel locomotives. The Electro-motive division of General Motors will build 22 of the large diesels for freight service, and two will be built by American Locomotive Company for passenger service. Baldwin Locomotive Works will supply the other 12 diesels for freight service.

$70,000 EXPANSION FOR SEABOARD COIL SPRING CORP.—Seaboard Coil Spring Corp., Los Angeles, will add 9,000 square feet to present manufacturing facilities at 435 E. Washington Street. This is Seaboard's third expansion project in the past nine years.

S. F. COMPANY PURCHASES PERLITE PROPERTY—C. T. Hanson Co., San Francisco, purchase the Pearl perlite property in the Cow Creek district, Nevada, and plan to install a screening plant and drying unit for production of perlite in three sizes for Pacific Coast markets.

CALIFORNIA FRUIT GROWERS EXPANDS—A $500,000 expansion program is now under way by California Fruit Growers Exchange at Ontario. The building to be used for the Products Department will contain 30,000 square feet.

PRODUCTION OF TURBOPROP AIRLINERS UNDERWAY—Consolidated Vultee Aircraft Corporation, San Diego, is producing the first turboprop airliner in the United States. This twin-engine, medium-range transport, to be known as the Convair-Turboliner, will be ready for a flight demonstration tour this summer.


FOR LOWER TARE WEIGHT
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To assure the utmost product protection in handling and shipping, all Wirebounds are constructed to specifications developed by exhaustive laboratory and field testing. Wirebounds are designed to meet the hazards of shipment and storage of your particular product.*
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The adaptability of the Wirebound principle is demonstrated by the variety of containers shown here. Heavy products, delicate products, products of odd or irregular shapes ship safely and at lower cost in Wirebounds. Ask us for suggestions on shipping your product.*
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OUR PRODUCT IS _____

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"A woman's wise when first she tries
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Everything you need to run the wearing apparel business—from adding machines to yarn—is listed in handy Classified, your guide to local suppliers and service people. When you're ready to buy, find it fast in the Yellow Pages. Just as other buyers will find your products fast, too, when you advertise in Classified.

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THE WEST ON ITS WAY

FRUEHAUF TRAILER CO. EXPANDS—Fruehauf Trailer Company opens new, large headquarters at 850 92nd Avenue, Oakland. The building occupies an area of over 60,000 square feet, situated on an 11-acre site. Phone: Lockhaven 9-3333.

WHITING ACQUIRES COBURN-FOSTER CONVEYORS—The Whiting Corporation, Harvey, Ill., manufacturers of materials-handling equipment, announce they have taken over the belt and chain conveyor business formerly operated as the Coburn-Foster Conveyor Company, Chicago. Conveyor equipment will be manufactured at the Whiting plants at Harvey, Ill., and Los Angeles, Calif., and will include belt conveyors—adaptable to both packaged goods and bulk materials, such as sand, grain, flour, coal, etc.

EXPORT BUSINESS HANDLED BY MOREHOUSE INDUSTRIES—Effective immediately, Morehouse Industries will handle all export business directly from its factory headquarters, 1156 San Fernando Road, Los Angeles 65. Morehouse Industries are manufacturers of Speedline grinding mills and equipment for the processing of foods, paints, plastics, inks and general chemicals.

DOOR COMPANY LOCATES IN OAKLAND—Screentite Door Company, manufacturers of a revolutionary new type screen door, formerly located in Richmond, lease a Port of Oakland building at 351 Embarcadero where they will triple the Richmond working area and double the production. J. V. Maloy is president and H. V. Van Ness, executive vice-president.

REORGANIZATION AT BRONCO RUBBER PRODUCTS—Brown Rubber Company of Los Angeles has completed integration with Bronco Rubber Products Co. of the same city. The reorganization did not affect the active management of the former Brown Rubber Company. Robert M. Brown is president and general manager of the new Bronco Rubber Products Company, in charge of production. Robert H. DeNike is vice-president and general sales manager.

CALIFORNIA CHASSIS CO. MOVES—California Chassis Co. has moved into their new building at 5410 Tweedy Blvd., South Gate, Calif. W. S. McNeal is factory manager. George Davis is southern California factory representative. The firm manufactures chassis, relay cabinets, panels, utility boxes, utility cabinets and other similar products.

$200,000 GLENDALE CONSTRUCTION—Construction begins on a $200,000 office and warehouse in Glendale to be occupied upon completion by the Cyclone Fence Division of the American Steel & Wire Company under a 20-year lease, with an option of 10 additional years.

ECONOMICS LAB. PURCHASES NEW PLANT—Economics Laboratory, Inc., St. Paul, Minn., purchases new manufacturing plant on Lafayette Street in Santa Clara, to facilitate West Coast deliveries of all its products. This is the first Western manufacturing operation established by the company. The plant will consume various types of chemicals, most of which are manufactured on the West Coast. It will not produce any chemical raw materials.

WESTERN SUGAR REFINERY BOUGHT BY C & H—The Spreckels interests announce completion of the sale of Western Sugar Refinery to California & Hawaiian Sugar Refining Corp., Ltd. The purchased plant will not be operated by C. & H. as at first planned. Because of changed conditions, all plans to operate it have been abandoned. The land will be disposed of for other industrial uses and some of the machinery will be removed to Crockett.

PACIFIC AIRMOTIVE CORP. AWARDED $600,000 CONTRACT—Pacific Airmotive Corporation, 2940 North Hollywood Way, Burbank, receives $600,000 Air Force contract award for the complete reconditioning of T-7 aircraft, including crating and shipping.

METTLER MOVES—Lee B. Mettler Co. moves to new modern factory and office building at 4366 Worth Street, Los Angeles 33. Telephone: AN. 9-1167.

GRAND CENTRAL NEGOTIATES WITH AVIATION MAINTENANCE—Grand Central Airport Co. of Glendale is negotiating with Aviation Maintenance Corp., Van Nuys, to purchase the latter firm's machinery, merchandise, equipment, inventories and tooling. These properties were offered by bid and Grand Central's figure was the highest during the bid period.

PACIFIC COAST PLANT FOR DeVILBISS CO.—DeVilbiss Co., Toledo, Ohio, manufacturers of spray painting equipment, air compressors and atomizers, will open a Pacific Coast assembling, warehousing and distributing plant in Santa Clara, Calif. about June 1st.

THE WEST ON ITS WAY

The new plant will serve the territory covered by DeVilbiss sales branches in San Francisco, Los Angeles and Salt Lake City.

NEW INSTALLATION AT PITTSBURG WORKS OF COLUMBIA STEEL—New equipment for flattening hot-rolled sheets is being installed in the sheet and tin mill at the Pittsburg Works of Columbia Steel Company, a Western subsidiary of U. S. Steel. It includes a single-stand, two-high temper mill and auxiliary flattening facilities. These new facilities are expected to be in operation within the next few months. Meanwhile, excavation has begun on foundations for the new equipment, and present building structures are being altered to accommodate the added facilities.

$1,250,000 SHRIMP TRAWLER JOB FOR NAT'L STEEL—Work will begin soon by National Steel & Shipbuilding Co. on $1,250,000 in orders for 25 welded-steel shrimp trawlers for Mexican shrimp packing firms operating in the Gulf of California. Plans call for hiring 100 additional men and go to a three-shift day in order to deliver the vessels by next November.

COLORADO

AIR BASE AT LA JUNTA UTILIZED—Utilization is being made of the former air base at La Junta for grain storage, turkey production, manufacture of furniture by Woodcraft Manufacturing Co., production of a newly patented saw filing machine by Ewers Manufacturing Co., and the manufacture of sash and doors by Fortier and Olson Company. Three buildings are still available at nominal rentals for light manufacturing, assembly or warehousing, ranging in size from 8,500 to 13,500 square feet.

DENVER PLANT PURCHASED BY KANSAS INTERESTS—Steffen Dairy Foods Company, Wichita, Kansas, purchase Garden Farm Dairy, one of the oldest and largest dairies in Denver, at a reported cost of $500,000. Charles Dunlap, former manager of the Steffen plant in Arkansas City, transfers to Denver to manage the Garden Farm dairy plant. Officers of the new company include: John D. McEwen, president; L. A. Deck, vice-president; and Owen C. McEwen, secretary-treasurer. Walter Skinner becomes general sales manager for both operations and will direct advertising and promotional campaigns.

CLIMAX MOLYBDENUM CO. PLANS TO MINE URANIUM—Climax Molybdenum Co. plans to engage in mining and processing uranium-vanadium ore in Colorado. The proposed project calls for construction of a mill at Grand Junction, having a capacity to treat from 50 to 100 tons of ore a day. The ore will be supplied largely from mining properties owned by Minerals Engineering Co. of Grand Junction, and from adjoining properties leased from the Atomic Energy Commission.

IDAHO

$250,000 PROJECT FOR UTAH-IDAHO SUGAR CO.—Utah-Idaho Sugar Co., sugar beet refiners, begins construction of a plant at its refinery at Idaho Falls to concentrate Steffen waste for shipment to the San Jose, Calif., monosodium glutamate plant of International Minerals & Chemical Corp. Completion is expected about August 1.

CONTEMPLATED EXPANSION FOR GATES BROS., INC.—Gates Bros., Inc., Wendell, manufacturer of treble superphosphate, contemplates expansion of its $1,000,000 plant, which may materialize during the coming year. In two or three years, a sulphuric acid plant may be installed. About 75 men are employed at present.

MONTANA

GOLD MILL BURNS AT MARYSVILLE—The Montana Rainbow Mining Company's gold mill went up in smoke with an estimated loss of about $150,000, in addition to nearly $85,000 worth of ore. Plans to rebuild the mill are on tap as soon as insurance claims are adjusted. In the interim, mining operations will continue.

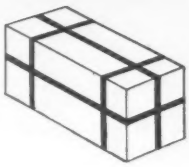
SUGAR BEET CLEANER UNIT MANUFACTURED—Flexi-Cleaner, a newly developed sugar beet cleaner unit, is being manufactured in Hamilton by Hydro-Point Engineering Company. Distribution is being made by Zent Hardware Company of Hysham.

Shipping costs go down

You're looking over the shoulder of a Signode representative who has just worked out an improved packaging method for a trailer manufacturer.

Prior to the introduction of Signode steel strapping, this company's product was laboriously and expensively crated. Today, a lightweight, easily handled container, simply secured with strong Signode steel strapping, does the job better — with important reductions in labor, material and shipping costs.

Of course your product may have nothing in common with a trailer. But the basic principles involved here . . . the multiple benefits inherent in steel strapping can be just as readily applied—often with equal or superior benefits. For further information, fill out coupon and mail today.



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THE WEST ON ITS WAY

NEVADA

CALCITE MINE OPENS—An Iceland spar and calcite mine opens near Montezuma. Operators Faustin Perea, Andrew N. Coble and Bert Chesak believe it to be the third of its kind in the nation. Before their discoveries, all such mineral was imported from Iceland.

$300,000 EXPANSION FOR U. P.—Union Pacific Railroad authorizes expenditure of $300,000 for expansion work in its Las Vegas yards. Plans call for extension of the yards, elimination of circular tracks, and installation of a new drill track and pull-out track. Two-way radio communication will also be installed in switch engines. Work is expected to be completed in early summer.

NEW MAGNESIA COMPANY FORMS—Standard Slag Company of Youngstown, Ohio, announce formation of The Standard Magnesia Company of Gabbs, Nevada, to handle the production and marketing of a range of magnesia products. Inquiries of every nature should be directed to the Nevada address.

UTAH

$200,000 EXPANSION FOR KRAFT FOODS—Kraft Foods Co. announce plans for erection of a new office and warehouse building in Salt Lake City at an estimated cost of $200,000. Building operations are expected to be completed by midsummer, which will triple the company's present space in that city.

COAL LANDS LEASED BY GENEVA STEEL—Geneva Steel Co. leases more than 2,500 acres of coal lands in Utah's Carbon County through the Federal Government. It received a lease on all but 150.16 acres of more than 2,700 acres available.

SILICA DEPOSIT DEVELOPMENT PLANNED—Western Glass Corporation, a newly formed company, plans to develop the silica deposits in Parowan Canyon, Iron County, Utah, including location

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because you can move materials much quicker. Easy one-man operation handles loads up to 6 tons . . . frees manpower for other assignments. This worm-drive electric hoist performs quietly and economically. Savings accumulated with an ElectroLift will more than pay for its installation. Complete details on the model that suits your capacity, speed and plant layout needs will be supplied by your nearby ElectroLift representative, listed in the classified telephone directory. Or write direct to:

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THE WEST ON ITS WAY

and construction of a glass processing plant. Unlimited amounts of sands are available of a quality well suited to glass manufacture in the 32 claims controlled by the company.

WASHINGTON

PLANT PURCHASED BY WELCH GRAPE JUICE—Welch Grape Juice Company purchases plant of Hyland-Stanford Corporation at Grandview from W. S. McAdoo and Lee Ward, and expects to increase capacity to handle Yakima grape tonnage.

PEA PLANT PURCHASED—Don Seaman, T. Foard Smith and E. W. Overstreet purchases San Juan Island Cannery, Mt. Vernon, from Virgil H. Neely and Warren Russell. San Juan plant, with a capacity of around 225,000 cases pack peas, is considered to be the oldest pea cannery in the Northwest.

$200,000 CONTRACT FOR SEATTLE FIRM—Ederer Engineering Company, 2931 First Avenue South, Seattle, awarded contract for erection of 21 overhead bridge cranes for the new Bethlehem-Pacific Coast Steel Corporation, Fabricated Steel Construction, Seattle Works, now under construction at 8501 East Marginal Way.

PACIFIC COAST BRANCH OF NATIONAL LEAD MOVES—Offices of the Northwestern division, Pacific Coast Branch of National Lead Co. move from Portland to Seattle. W. C. Minsinger is division manager in Seattle.

WYOMING

STANDARD OIL SELLS REFINERY—Standard Oil Company sells its abandoned Greybull refinery to Northwestern Iron and Metal Company of Lincoln, Nebraska. Sale included both equipment and buildings.

F & H WHEELS

for

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FRENCH & HECHT DIVISION

KELSEY-HAYES WHEEL COMPANY

DAVENPORT, IOWA

Wheel Builders Since 1888

NOW

HERE IS THE TORCH YOU HAVE BEEN WAITING FOR!

VICTOR takes pride in announcing a COMPLETELY NEW Hand Cutting Torch, Model CTS-400 Series, available in 90° or 75° head. Its streamlined design, rugged construction and stainless steel head and tube assembly distinguish this torch as a great advancement towards better, faster and more economical hand cutting!

Here is the new Model CTS-400 Series torch in action! Note operator cutting live natural gas line, with other operator holding torch to keep the gas lit.

This new torch also has incorporated into it the well known and approved distinctive design features that have given VICTOR Hand Cutting Torches an unexcelled reputation. Of great interest to the user, the stainless steel head and tube assembly are one unit that can be replaced without purchasing the complete torch. If it is desired, both the 75° and 90° head may be purchased to give the user a wider range of operation.

THE MODEL CTS-400 SERIES TORCH FEATURES . . .

Rugged Stainless Steel Tip Nut, Head and Tubes.

New High Capacity, Wear Resistant, Trouble-Free, Cutting Oxygen Valve, operated one-half million times with no detection of wear!

Newly designed oxygen and fuel control valves. "O" Ring pressure seals replace outmoded packing. Requires no take-up or adjustments.

High heat-resistant copper alloy mixer and mixer tube!

No Obstruction from head to handle, assuring Smooth and Uninterrupted Cutting.

Designed for Twin Hose!

Maintenance Costs Reduced to Minimum!

Simplicity of Design and Unusual Eye Appeal!

251

PUT THIS TORCH TO TEST! . . . Subject it to your most severe cutting job! . . . YOU WILL FIND YOU WILL WANT THIS TORCH!

SEE YOUR VICTOR DEALER!

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WESTERNERS AT WORK

California

PAUL COURTNEY elected vice-president, and A. H. MILLER named secretary-treasurer of Emsco Derrick & Equipment Company.

EDWARD LEE SOULE', JR. elected vice-president and general production manager for all plants of Soulé Steel Company. The company's three California plants and its Portland plant are now under his direct supervision.

JAMES HARDING appointed chief production engineer and plant manager for Modernair Corporation. Harding, formerly associated with Schlage Lock Company and Marchant Calculator, is well known in the bay area.

PAUL I. BIRCHARD named vice-president and general manager of Enterprise Engine & Foundry Company with headquarters in San Francisco.

RAYMOND B. GILES named to the newly-created post of business development director of Pacific Coast Engineering Co., Alameda, Calif. JOHN F. MARTIN named sales manager.

Union Oil Company of California's Wilmington refinery names MAX PARKIN to its administrative staff. He will also serve as assistant superintendent in charge of operating and treating.

RANDOLPH E. WOLCOTT named purchasing agent for National Motor Bearing Co., Inc., with headquarters in Redwood City, Calif., succeeding WORTH JOHNSON.

FRANK E. HARPER, former tire assembly general foreman in Akron plant, becomes production superintendent of the Los Angeles plant of B. F. Goodrich Co.

General Petroleum Corporation appoints RICHARD E. LAUTERBACH assistant manager of the company's Torrance refinery. PAUL SANDERS advances to the post of general superintendent of the plant.

J. V. NAISH, currently director of contracts, is given added assignment of director of sales for Consolidated Vultee. J. C. ZEVELY appointed manager of contracts for Convair's San Diego Division.

Plant engineers of the San Francisco Bay region organize a club, similar to those in eastern industrial centers, and plan to have separate organizations for San Francisco, the lower Peninsula, East Bay cities and the Richmond-Vallejo-Pittsburg area. ED F. SULLIVAN, San Francisco Naval Shipyard, and ROLLIN J. LOBAUGH, Pacific Screen Products Co., were leaders in the movement, whose function is to deal with facilities and utilities of industrial plants.

EDWARD MELTZER, Los Angeles Period Furniture Manufacturing Company; PAUL SCHMITZ, Bailey-Schmitz Co., and A. W. SANDBERG, Sandberg Furniture Manufacturing Company, re-elected president, vice-president and treasurer, respectively, at the annual meeting of the Los Angeles Furniture Mart property owners corporation.

Personnel changes at the Daystrom Corporation and Balboa Pacific Corporation include: C. E. FERGUSON, vice-president of the Daystrom Company, becomes executive vice-president and treasurer of Balboa, devoting his full time to that company at Fullerton; HOMER SIMPSON, vice-president in charge of sales at Daystrom, elected to the same office in Balboa; JOHN MURRAY elected Balboa's vice-president and factory manager, and FRED KIRSCHNER appointed sales manager.

Plymouth Motor Corporation names CREIGHTON C. ROWLES plant manager of Chrysler Motors Los Angeles plant. Rowles, who has been a member of the general works manager's staff since the war, has been associated with Chrysler Corporation for 22 years.

JOHN H. PETTKER, consulting engineer in the glass industry, becomes plant manager for Latchford-Marble Glass Co., Los Angeles. W. R. BENNETT, vice-president in charge of manufacturing for Latchford-Marble, resigns.

WILLIAM E. QUAY, formerly assistant plant manager of M. & M. Wood Working Company's fir plywood plant at Albany, Oregon, becomes manager of the firm's redwood plywood operations at Eureka, succeeding ELMER HALL, resigned.

General Petroleum Corporation appoints JAMES H. CURTIS manager of manufacuring.

United States Steel Corporation, 1341 Russ Building, San Francisco 4, names GORDON H. BANNERMAN manager of a newly-created Tramway Division of Columbia Steel Company, a subsidiary of U. S. Steel Corp.

A. A. ACKELS promoted to manufacturing superintendent of the Sperry division of General Mills, replacing C. E. ROBINSON, vice-president and manufacturing superintendent, retired.

Pacific Automotive Corporation names W. R. MILLER executive assistant to the vice-president and general manager.

California Home Fashions, 2155 East 7th Street, Los Angeles 23, elects: FRANK O'CONNOR, merchandising manager, Balboa Pacific Corporation, Fullerton, chairman, succeeding JOSEPH ADAMO, Los Angeles; BERNIE ROBERTS, Modeline Company, vice-chairman; DAVID HERINGTON, Deeco Furniture, treasurer; and JAMES J. COWEN, Los Angeles Furniture Mart, secretary.

Hershel California Products Co., San Jose, names SAM CAVA plant superintendent.

Colorado

LES BROWN, former general foreman of the CF&I roll shops at Pueblo, named superintendent, succeeding DAVE PROSSER, retired. GORDON EDGAR advances to general foreman, succeeding Les Brown.

New Mexico

JAMES L. TAYLOR leaves his position as chief engineer for the potash mine and refinery of International Minerals & Chemical Corp., Carlsbad, New Mexico, to become construction engineer for the entire corporation.

Oregon

CHARLES L. PAINTER appointed branch manager of the manufacturing and repair department for Westinghouse Electric Corporation in Portland, succeeding HAROLD T. LEY who has been promoted to a post in the Portland sales office of the corporation.

THOMAS B. MALARKEY, former vice-president and secretary of M. & M. Wood Working Co., Portland, appointed executive vice-president, to take over management. HERBERT MALARKEY, president, retires, but will remain a director.

Utah

Utah Petroleum Industries committee appoints BEVERLY S. CLENDENIN its executive secretary, succeeding BURTON W. MUSSER. Named to the executive committee were: S. N. BELL, chairman; A. J. BADGER and FRED C. EASTMAN.

Changes in personnel at The Lang Company, Salt Lake City, include: RICHARD H. RAMPTON appointed manager of the industrial equipment division succeeding WALTER W. KERSHAW; J. VERNE TAYLOR named division sales manager; LAMAR W. MIDGLEY appointed assistant to the division manager; ALVIN J. CARLSON, HOWARD A. WESTERN and GEORGE T. WOOD, named shop service manager, parts department manager and field service manager, respectively.

J. K. RICHARDSON, formerly manager of the Utah Mining Association, named industrial engineer for the Western operating division of Kennecott Copper Corporation with headquarters in Salt Lake City.

Washington

NOEL ROBB transferred from Houston, Texas, to become production manager at Spokane for Carnation Company.

J. C. CRAMPTON becomes mill superintendent of the Pend Oreille Mines & Metals Company, Metaline Falls, Washington, succeeding CONRAD HOFF, retired.

GEORGE A. HOLT, former superintendent of operations of Rayonier, Inc., Shelton, named assistant resident manager and general superintendent of the Grays Harbor, Washington, division.

Western TRADE WINDS

News about those who distribute and sell industrial equipment and materials

Personnel changes in the *Grinnell Company of the Pacific* include: C. R. NICOLAI, formerly sales engineer in the San Francisco office and later manager of the Sacramento branch, becomes manager in their Denver office; CLIFF KNUDSEN, formerly attached to the San Francisco office, becomes manager of the Sacramento branch; and JIM MAHONEY transfers from the Seattle office to Portland as manager of the new branch there.

The *Goodall Rubber Company* move their San Francisco offices from 678 Howard Street to 398 Fifth Street, in larger and more modern quarters.

ORLAN SHOOPMAN rejoins the Western sales division of *Caterpillar Tractor Co.* in San Leandro, as motor grader demonstrator.

A. C. ASH

ALVIN C. ASH appointed technical sales service representative of *Pennsylvania Salt Manufacturing Company's* Washington Agricultural Chemicals Division, with headquarters at the company's plant in Tacoma. Ash was formerly connected with the Agricultural Technical Service Department of Sherwin-Williams Company, and in that capacity was located at Oakland, California, and Cleveland, Ohio.

Personnel changes at *Moore Business Forms, Inc.*, 5750 Hollis Street, Emeryville, California, include: RAY FOSTER heads new office at Fort Collins, Colorado; RAY KRAUSS becomes manager of newly-opened office at Wenatchee, Washington; DON KANTOLA placed in charge of the entire territory of Alaska, with headquarters and home in Anchorage; RAY SIMPSON, salesman for the past ten years in Seattle, becomes supervisor in the city area; VESTER C. NELSON continues as district manager for the area of Western Washington from Aberdeen and Centralia to the Canadian line and Alaska.

Gardan Manufacturing Company, New Castle, Pa., appoint *Valley Engineers*, P. O. Box 1009, Glendale, exclusive applications engineers and sales representatives for its Bellows Seal-Boot in the Los Angeles area.

R. L. BOOTH

Oakite Products, Inc., New York, manufacturers of specialized industrial cleaning and related materials, appoint R. L. BOOTH as special technical and sales representative in the Tacoma, Washington area, with headquarters at 632 North Sprague, Tacoma. Booth formerly served the company in the same capacity in Seattle.

GEORGE MORAN named district freight agent of Pope & Talbot Lines, with headquarters in San Francisco.

E. M. ELLIS appointed Los Angeles manager of General Electric Company's Apparatus Department with headquarters at 212 N. Vignes street, succeeding G. F. MAUGHMER, who has been appointed manager of a newly created company district with headquarters in St. Louis, Missouri.

STEPHEN A. CERUTI appointed assistant Western division sales manager of *Apex Electrical Manufacturing Co.* of Cleveland, Ohio.

Shell Oil Company names W. S. FLOYD manager of purchasing in the San Francisco office.

Towmotor Corporation, Cleveland, Ohio manufacturers of fork lift trucks, tractors, and materials handling accessories, held a Western regional sales meeting at the Palace Hotel, San Francisco, April 20 and 21. Dealers, distributors and salesmen from all over the West were present to hear company officials give important talks on current sales plans, and to see what is being done advertising-wise and product-wise in 1950. Shown here are: (left to right) Lee Daniels, chief engineer at the Towmotor plant; Alfred H. Roth, advertising and sales promotion manager; C. E. Smith, executive vice-president; Dan Wessman, Towmotor service manager; and Win Utley, Assistant to Roth.

BERNARD E. DAVID joins *Arcos Corporation*, Philadelphia, Pa., manufacturer of stainless low alloy high tensile and non-ferrous electrodes, as a special field engineer with headquarters in Los Angeles.

Westinghouse Electric Corporation names F. W. JORDAN, San Francisco, air conditioning district manager for the Pacific Coast; and R. W. SIGMUND, San Francisco, becomes Pacific Coast manager of air handling field sales.

GEORGE HUFFMAN joins the *E. D. Bullard Co.*, 275 Eighth Street, San Francisco 3, industrial safety organization, as advertising manager; and EDWARD BULLARD, JR., promoted to the position of assistant to vice-president in charge of sales.

On July 10th, *James B. Lansing Sound, Inc.*, Los Angeles, begins a two-weeks traveling electronic exhibit in the midwest using planes for the entire trip. Other products to be displayed besides Lansing speaker systems and units include Magnacord wire recorders and MacIntosh amplifiers.

Mine and Smelter Supply Co., 1422 17th Street, Denver, Colorado, appointed exclusive representatives for *Hydro-Line Air and Hydraulic Cylinders* in the Denver and El Paso territory.

ALFRED WHITTAKER appointed Pacific Coast manager, Woven Wire Fabrics division of *John A. Roebling's Sons Company*, with headquarters at 216 S. Alameda Street, Los Angeles. His territory will include California, Washington, Oregon, Nevada, Arizona, Idaho and New Mexico.

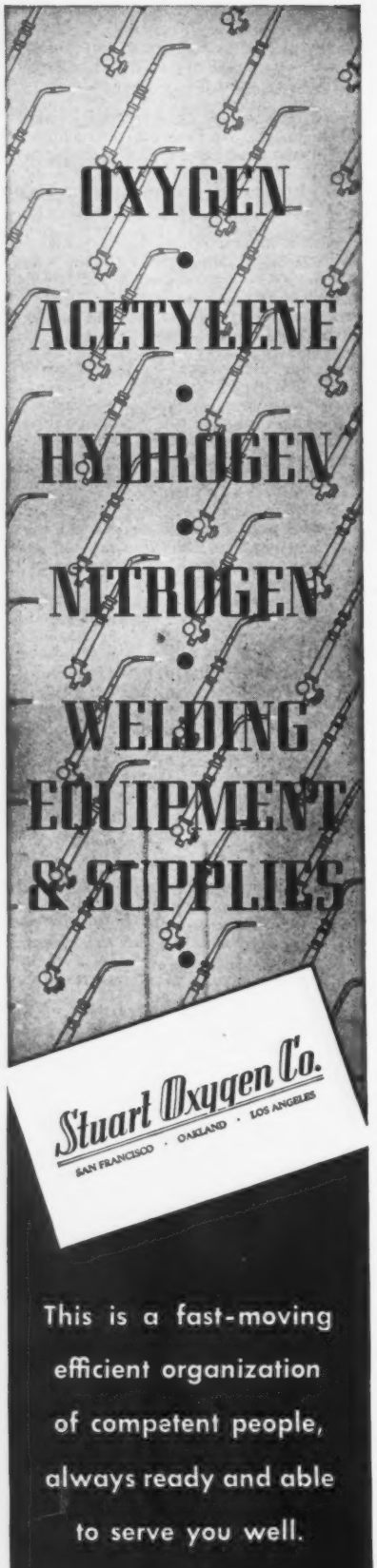
Babcock & Wilcox Tube Company appoints H. F. LEFFERTY, Pacific Coast sales manager, succeeding H. P. CURTIS, resigned. Lefferty's new headquarters will be in the Petroleum Bldg., 714 Olympic Boulevard, Los Angeles.

The *Chain Belt Company*, Chain and Conveyor Division, San Francisco, appoint *Guntert & Zimmerman* distributors for the Stockton area, and name *Pacific Hardware Steel Company*, San Jose, distributor for the San Jose, Salinas and Monterey area.

The Paraffine Companies, Inc. appoint S. L. GIDLEY district manager for Pabco's northern district with headquarters at 140 N.E. Broadway, Portland, Oregon. Gidley, and the sales force under his direction, will service all independent Pabco Paint dealers and Pabco Paint marts in Washington, Oregon and Idaho.

L. C. FALKENHAGEN named Portland factory representative of the *Campbell Chain Company* of York, Pennsylvania, manufacturers of industrial and automobile chains, with headquarters on S. E. Grand Avenue and Stephens Street.

Recently the employees of the *A. B. Boyd Corp.*, San Francisco, with branches in Los Angeles, Portland and Seattle, bought the controlling interest of that firm. E. A. LUSCH, formerly general manager, is president. There will be no change in management, policies or personnel. The Boyd Company have been appointed exclusive distributors in the Pacific Coast states for *Bridgeport Fabrics Company* of Bridgeport, Conn., manufacturers of Automobile trims and weldings. Also for the *Denison Mattress Factory* of Denison, Texas, manufacturers of upholstery felts, for the same area. They are well known throughout this entire territory as distributors for *American Felt Company*, manufacturers of industrial felt.



GERALD C. RASEY joins *Enterprise Engine & Foundry Company* as sales manager of the engine division, with headquarters at 18th and Florida, San Francisco.

GENE RENNER, formerly with International Harvester Company, appointed sales promotion manager of *Reynolds Metals Company*, San Francisco. D. A. BROWNLIE, formerly regional manager, building products division, is now attached to their main offices at Louisville. PAUL WILMORE appointed to fill the vacancy created by the transfer of Brownlie. The Company is now located in their new offices at 061 Geary Street, San Francisco.

R. W. McINTOSH

Pittsburgh Coke & Chemical Company appoint RUSSELL W. MCINTOSH as West coast representative for Pittsburgh Protective Coatings, with offices in the Russ Building, San Francisco. Prior to his affiliation with this company, McIntosh handled sales for the Koppers Company, Inc., in northern California, Washington, Oregon and British Columbia, Canada.

HERB DURLAN of *Shand & Jurs* organization, Berkeley, California, transferred to their Chicago office as sales representative.

EDWARD E. JOHNSON named sales manager for the Western division of the *Martin Brothers Box Company*, designers and manufacturers of wirebound shipping containers for industry and agriculture, with headquarters in Whittier, California. He will also supervise sales branches in San Jose, Calif.; Oakland, Oregon; and Seattle, Washington.

Signode Steel Strapping Company, Chicago, Illinois, appoints TOM TOLBY its representative in Oregon and southern Idaho, succeeding JAMES R. WILLIAMS who transfers to Chicago as sales promotion manager. Tolby's headquarters will be at 1500 S.W. Harbor Drive, Portland 1, Oregon.

Pacific Coast Industrial Equipment Co., 317 North Berendo, Los Angeles 4, announces new shop facilities located at 9539 East Rush Street, El Monte.

Liberty Equipment Company, Los Angeles, Calif., is appointed exclusive West Coast jobber for *Marshall Steel Company* of McCook, Ill. Marshall Steel manufactures a complete line of ground flat stock tool steel in water, oil, and air hardening types. They are known under the brand names: WATERcrat, OILcrat, and AIRcrat, and are available in 441 standard sizes.

A. M. Castle & Co., 3660 East Marginal Way, Seattle 4, Washington, completes expansion of warehouse. The original building shown in illustration on the left was occupied in 1945, and the addition on the right is 50 x 480 feet. This now gives a total warehouse area of approximately 100,000 sq. ft. Purpose of the new building is to provide a heated warehouse for Sheet Steel and Cold Finished bars which is absolutely necessary for the proper storage of these commodities. A. M. Castle & Co. is a national concern distributing various steel products with headquarters in Chicago. Warehouses are located in Chicago, Milwaukee, Kansas City, Seattle, San Francisco, Berkeley and Los Angeles.

VIRGIL H. GREENLEY named San Francisco district sales manager of *Pioneer Rubber Mills*. Greenley will direct the sales of Pioneer mechanical rubber products in Northern California and Nevada.

California Cold Rolled Steel Corporation, 7140 Telegraph Road, Los Angeles 22, names C. L. SMART vice-president. DONALD E. TAYLOR and A. WAYCOTT join the sales department of the organization.

JOHN P. LOGAN appointed industrial sales supervisor for *Westinghouse Electric Corporation* in the Los Angeles area, succeeding C. D. SMITH, who becomes assistant to the branch manager of the corporation.

Reed-Prentice Corp., Worcester, Mass., open a Chicago sales office. J. H. WOLCOTT, former manager of the company's Los Angeles office, assumes managership of the new Chicago office with CHARLES HOLLAND joining him as sales engineer. IVER J. FREEMAN named to replace Wolcott as manager of the Los Angeles branch.

CHARLES F. COOPER named assistant sales manager of the Central district of *Kaiser Steel Corporation*. The district covers northern California, southern Oregon, Idaho, Utah, Montana and Nevada.

F. W. BEICHLEY appointed Pacific Coast district engineering supervisor *for Westinghouse Electric Corporation* with headquarters in San Francisco. Formerly transportation engineering supervisor at San Francisco, Beichley, in his new post will correlate the company's Consulting and Application engineering here in the district with the Engineering Manager's office at East Pittsburgh. He will also retain responsibility for all operations which have come under his direction as transportation engineering supervisor.

Personnel changes at the *Howard Supply Company*, Los Angeles, include: EARL COVEL named manager of machinery sales; W. J. MALLIN and C. F. WARNER appointed assistant managers of machinery sales; and R. F. SCHOOLING named assistant manager of tubular sales, with headquarters in the Los Angeles office.

Refrigerating and Power Specialties Co., San Francisco, announce they will handle the selling and servicing of nationally known *Dunham Heating Products* in northern California and western Nevada effective April 1.

General Electric Company appoints ROBERT M. GATES sales engineer for its Apparatus Department in Spokane, Washington.

L. S. FULTON transfers from *The Glidden Company's* Cleveland headquarters to the position of Western regional director with headquarters in San Francisco, succeeding Z. G. PECK, retired. Other changes: ROBERT ABERNATHY transfers from San Francisco to Seattle to cover the Northwest territory; ROBERT J. HAWKINS assumes position of technical service director in addition to his other duties in their laboratory.

Pennsylvania Flexible Metallic Tubing Company, manufacturers of flexible metallic hose, now occupy a new building with increased stock and facilities at 3414 Emery Street, Los Angeles 23.

ALEXANDER TOBEN, formerly associated with *Ledeen Manufacturing Company*, Los Angeles, and most recently with *Cardwell Manufacturing Company*, rejoins Ledeen engineering sales staff.

Natural Gas Equipment, Inc. move offices to 190 East Glenarm Street, adjacent to the Arroyo Seco Parkway, Pasadena 2, Calif. The new location gives the company increased office space and ample warehousing facilities. The new structure, a two-story building containing approximately 7,000 square feet, is served by a spur of the Southern Pacific Railroad.

West Coast Electronic Manufacturers Association: Newly-elected officers, left to right, above: H. P. Balderson, Thermador Electrical Manufacturing Co., Los Angeles, president; Orrin H. Brown, Eitel-McCullough, San Bruno, vice-president; Fred W. Falck, Jr., Advance Relay Co., Burbank, treasurer; and Noel E. Porter, Hewlett Packard, Palo Alto, secretary.

West Coast Electronic Manufacturers Association admits Tektronics, Inc., Portland, to membership under the San Francisco Council.

Personnel changes at *Solar Aircraft Company*, San Diego, include: C. D. OBERG, former manager of contract administration at its Des Moines, Iowa, plant, named manager of aircraft product sales at San Diego; RICHARD W. BOURNE becomes San Diego's commercial product sales manager; GRANT B. STONE transfers from its New York office to Los Angeles as manager, succeeding CLARK HICKERSON; Hickerson becomes assistant manager of aircraft product sales in San Diego.

Members of the *Enterprise Diesel Engine* sales organization from district offices throughout the country met with the San Francisco home office personnel at Sonoma Mission Inn, California, for their 3-day annual sales meeting in April. Among those attending were: G. C. RASEY, sales manager, Engine Division; J. E. WATSON, general sales manager; P. I. BIRCHARD, vice-president and general manager; W. E. BUTTS, president; W. H. PORTER, district manager, Seattle; J. H. SHEUSNER, chief engineer; H. L. HANSEN, chief service engineer; H. F. NEUMAN, stationary sales; M. T. PRENDERGAST, manager service parts; P. R. DEVOS, sales engineer; S. F. ATSATT, project engineer; E. G. HARRIS, district manager, Los Angeles; T. S. WHITE, technical assistant; H. J. DAUPHINEE, export sales; G. J. BRUSHER, marine sales; and L. S. NOAH, advertising manager.

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WEBSTER C. WILEY elected vice-president of *Wayne Manufacturing Company*, Pomona. Since joining the Wayne organization in 1947, Wiley has directed the company's nation-wide sweeper sales.

JAMES A. LONGLEY, JR. named manager of the general machinery division's San Francisco district office of *Allis-Chalmers Manufacturing Co.*, succeeding R. D. MOODY who becomes manager of the company's Los Angeles district.

Ac'cent, pure monosodium glutamate, names the brokerage firm of *E. L. Roberts Co.*, 260 California Street, San Francisco, to handle retail sales in northern California.

Refrigeration Engineering, Inc., 7250 E. Slauson Avenue, Los Angeles 22, appoints HARRY L. QUINN director of sales for all Recold products excepting those in the Oil and Gas division.

VERNE E. DODSON appointed district manager of engineering for the General Electric Company's Northwestern District with headquarters in Seattle. Since July 1948, Dodson has been assistant to the Pacific district manager in the San Francisco headquarters. Prior to that he was head of the Industrial Section for the company's San Francisco Engineering Division.

Schaevitz Engineering, Camden, N. J., appoints *Neely Enterprises*, Hollywood, its sales representative for California, New Mexico, Arizona and Nevada.

Kelly-Koett Mfg. Co., Covington, Ky., manufacturers of instruments for the measurement and detection of radio activity, appoint *Conrad R. Strassner Co.*, Los Angeles, its factory representative for California, Arizona, New Mexico and Nevada.

L. Sonneborn Sons, Inc., names ROBERT J. SANDKE and WILLIAM F. GREENWALD co-managers of West coast sales of petroleum products. L. B. BENJAMIN, representative for Sonneborn on the West coast for many years, will now devote his activities completely to Pacific Coast sales of Sonneborn products for building construction and maintenance.

A. D. WAGEN

A. D. WAGEN named Pacific Coast divisional director for *Pittsburgh Plate Glass Company*'s paint division, succeeding LOUIS F. THEURER who retires after 31 years' service with the paint division.

Clark Equipment Company, Industrial Truck Division, Battle Creek, Michigan, appoints JOHN I. BEICHER its Western regional supervisor with headquarters in San Francisco.

Eriez Manufacturing Co., Erie, Pa., announce that DICK DIETRICH, 1355 Market Street, San Francisco, is the exclusive West coast textile sales agent for Eriez permanent magnetic separators.

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AA

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All Classified Advertising for the July Issue must be in San Francisco by the 10th of preceding month if proofs are required, by the 15th if no proofs are required.

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Associations Elect

Canners League of California: Dale G. Hollenbeck, Thornton Canning Company, Thornton, elected president.

Montana Lumbermen's Association: Steve Posterick, Livingston, president; Roger W. Walsh, Great Falls, vice-president; Earl A. Clute, Missoula, treasurer; and W. J. Howard, Missoula, re-elected to his 13th term as secretary-manager.

Utah Mining Association: Paul H. Hunt, Park Utah Consolidated Mining Company, president, succeeding W. H. H. Cranmer, New Park Mining Company; A. G. Mackenzie, former association manager, vice-president; and W. C. Page, United States Smelting, Refining and Mining Company, second vice-president.

The Society of the Plastics Industry, Northern California Chapter: L. N. WEST, president; N. J. EIREMAN, vice-president; J. R. AKERS, secretary, and GEORGE W. HARMSSEN, treasurer.

Pacific Northwest Trade Association: FRANK E. MCCASLIN (Portland) president; T. G. NORRIS (Vancouver, B. C.) vice-president; D. D. SCHINDELE (Seattle) executive secretary.

Pacific Coast Transportation Advisory Board elects: J. W. Witherspoon, assistant general traffic manager of U. S. Rubber Co., its general chairman succeeding Irving F. Lyons; George D. Cron, traffic manager of Chevrolet-Oakland division, vice general chairman; and Robert C. Neill, traffic manager of California Fruit Growers Exchange, general secretary.

Advertising Association of the West: Andrew Nealy, Batten, Barton, Durstine & Osborn, Los Angeles, General Chairman of Advertising Craft Awards Committee for 1950; John B. Long, California Newspaper Association, newspaper advertising; Erick Smith, Burroughs', Inc., direct mail advertising; Robert J. McAndrews, Southern California Broadcasters Association, radio advertising; Thomas L. Kizer, California Transit Advertising, Inc., transit advertising; J. A. Brogdon, Outdoor Advertising Incorporated, outdoor advertising.

Intermountain Logging Conference: Warren Brown, McCall, Idaho, president; Mark Schoknecht, Libby, Montana, vice-president; O. E. Calvin, Deer Park, Washington, treasurer; and Charles P. Keim, Kalispell, Montana, managing secretary.

Western Frozen Food Processors Association: Mel Spiegl (Spiegl Farms) president; L. J. Campodonico (Western Frozen Foods Company) vice-president; and K. M. Eberts (Honor Brand) treasurer.

Utah Coal Operators Association: P. L. Shields, Spring Canyon Coal Co., president; Walter F. Clarke, Independent Coal and Coke Co., vice-president; and B. P. Manley, executive secretary.

Northwest Canners Association, Portland: T. E. McCaffray, National Fruit Canning Co., Seattle, president; George M. Martin, Utah Canning Co., Freewater, first vice-president; E. F. Kale, C. S. Kale Canning Co., Everson, second vice-president; and Ivan H. Morehouse, Olympia Canning Co., Olympia, Washington, to executive committee.

Problem of Designing Noise Away

Increasing demand for electrical power combined with the expansion programs of the power companies to meet it, has developed a noise problem that is receiving attention from the country's power engineers and equipment manufacturers.

Noted power engineers and equipment designers who attended the American Institute of Electrical Engineers at the Hotel Statler, New York, last month, heard about it. They also reviewed progress being made in solving the problems of noise from transformers which have been installed outdoors, sometimes near residential and business districts.

C. E. Baugh, of Pacific Gas and Electric Co., San Francisco, sparked the audience when he told them that the basic cure rests with transformer builders and designers. He further stated that noise problems in transmission will require the attention of our most capable designers and continual cooperation by the manufacturers and users.

Uncle Can Be a Costly Customer

Many manufacturers, big and little, have been taking a kick in the pocketbook when the Government cancels a procurement contract. These cancellations are always for the "convenience of the Government," and many California manufacturers have found that doing business with Uncle Sam can be very expensive in such instances.

To the end of alleviating this industrial distress, California Manufacturers Association, on behalf of California workers and employers, wants the California delegation of lawmakers in Washington to spearhead a law that will specify fair rules for terminating Government contracts.

Crux of the trouble seems to stem from expiration of the Contract Settlement Act of 1944 and the Surplus Property Act of 1944. Since expiration of these constructive laws, contract termination settlements have been subject to a maze of rules and regulations both restrictive and costly to businessmen. CMA now proposes rules to cover the situation.

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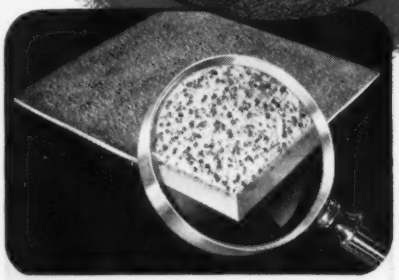
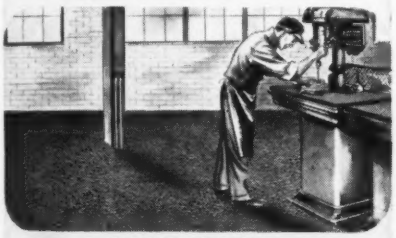


The magnified section of A. W. ALGRIP shows the even distribution of abrasive grain in the upper portion of the rolled steel floor plate.



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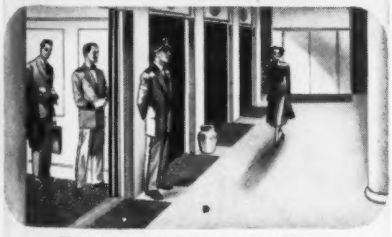

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